

TABLE 2. Estimated number and percentage* of children enrolled in kindergarten with exemption(s) from vaccination, by state/area and type of exemption — United States, 2013–14 school year

State/Area	Medical exemptions [†]		Nonmedical exemptions [†]				Total exemptions [†]			Percentage point difference
	No.	%	No. of religious exemptions	No. of philosophic exemptions	Total no.	%	Total no.	2013–14 (%)	2012–13 (%)	
Alabama	70	<0.1	447	\$	447	0.6	517	0.7	0.7	0.0
Alaska	119	1.2	421	\$	421	4.1	539	5.3	5.6	-0.3
Arizona	175	0.2	¶	4,195	4,195	4.7	4,370	4.9	4.2	0.7
Arkansas	24	<0.1	135	333	468	1.1	493	1.2	1.1	0.1
California	1017	0.2	††	17,253	17,253	3.1	18,270	3.3	3.0	0.3
Colorado	0	<0.1	195	3,097	3,292	4.6	3,291	4.6	4.3	0.3
Connecticut	128	0.3	670	\$	670	1.6	725	1.9	1.7	0.2
Delaware	9	<0.1	83	\$	83	0.7	92	0.8	0.7	0.1
District of Columbia	85	1.1	33	\$	33	0.4	118	1.5	1.6	-0.1
Florida	772	0.3	3,991	\$	3,991	1.7	4,763	2.0	1.8	0.2
Georgia	143	<0.1	2,420	\$	2,420	1.7	2,563	1.8	2.3	-0.5
Hawaii	0	<0.1	634	\$	634	3.2	634	3.2	2.5	0.7
Idaho	89	0.4	147	1,304	1,451	6.1	1,540	6.4	5.9	0.5
Illinois**	NA				NA		NA	NA	6.1	NA
Indiana	348	0.4	727	\$	727	0.8	1,075	1.2	1.3	-0.1
Iowa	205	0.5	521	\$	521	1.2	726	1.7	1.7	0.0
Kansas	213	0.8	527	\$	527	1.9	739	2.6	1.1	1.5
Kentucky	148	0.3	357	\$	357	0.6	505	0.9	0.7	0.2
Louisiana	83	0.1	28	394	422	0.7	505	0.8	0.7	0.1
Maine	56	0.4	30	766	796	5.2	852	5.5	4.3	1.2
Maryland	244	0.3	513	\$	513	0.7	758	1.0	1.0	0.0
Massachusetts	332	0.4	860	\$	860	1.1	1,192	1.5	1.5	0.0
Michigan	573	0.5	1,250	5,226	6,476	5.4	7,049	5.9	5.9	0.0
Minnesota**	NA				NA		NA	NA	1.6	NA
Mississippi	17	<0.1	¶	\$	NA		17	<0.1	<0.1	0.0
Missouri**	NA				NA		NA	NA	1.8	NA
Montana	36	0.3	426	\$	426	3.3	463	3.6	3.5	0.1
Nebraska	158	0.6	307	\$	307	1.1	465	1.7	1.7	0.0
Nevada	7	<0.1	724	\$	724	2.0	731	2.0	2.5	-0.5
New Hampshire	49	0.4	328	\$	328	2.5	377	2.8	2.5	0.3
New Jersey	262	0.2	1,741	\$	1,741	1.4	2,003	1.6	1.4	0.2
New Mexico	72	0.2	277	\$	277	0.9	349	1.1	0.4	0.7
New York	302	0.1	1,547	\$	1,547	0.6	1,849	0.8	0.7	0.1
North Carolina	161	0.1	1,105	\$	1,105	0.9	1,266	1.0	0.8	0.2
North Dakota	32	0.3	45	185	230	2.3	262	2.7	1.8	0.9
Ohio	369	0.2	††	††	2,681	1.8	3,050	2.0	2.0	0.0
Oklahoma	73	0.1	221	586	808	1.4	880	1.5	1.3	0.2
Oregon	62	0.1	3,331	††	3,331	7.0	3,393	7.1	6.5	0.6
Pennsylvania	510	0.3	1,133	1,419	2,552	1.7	3,062	2.0	2.0	0.0
Rhode Island	33	0.3	81	\$	81	0.7	114	1.0	1.1	-0.1
South Carolina ^{§§}	83	0.1	772	\$	772	1.2	855	1.4	NA	NA
South Dakota ^{§§}	21	0.2	199	\$	199	1.6	220	1.8	1.8	0.0
Tennessee	132	0.2	773	\$	773	1.0	906	1.1	1.2	-0.1
Texas (including Houston)	2,266	0.6	††	††	5,536	1.4	7,803	1.9	1.7	0.2
Houston	979	0.3	NA	NA	NA		979	0.3	0.9	-0.6

See table footnotes on page 919.

Second, vaccination and exemption status reflected the child's status at the time of assessment. Reports might not be updated when parents submit amended school vaccination records after the required vaccines are received or an exemption is claimed. Third, a child with an exemption is not necessarily unvaccinated. More than 99% of the 2008–2009 birth cohorts who became kindergartners in 2013–14 received at least one vaccine in early childhood (6). An exemption might be provided for all vaccines even if a child missed a single vaccine dose or vaccine, or different

exemptions might be provided for different vaccinations. A parent or guardian might choose to complete the required exemption paperwork if that is more convenient than having a child vaccinated or documenting a kindergartner's vaccination history at school enrollment, which might be the reason for up to 25% of nonmedical exemptions (7–9).*** Fourth, methodology varied by

*** Tools are available to help parents manage vaccination records for their family; additional information available at <http://www.cdc.gov/vaccines/parents/record-reqs/immuniz-records-child.html>.

TABLE 2. (Continued) Estimated number and percentage* of children enrolled in kindergarten with exemption(s) from vaccination, by state/area and type of exemption — United States, 2013–14 school year

State/Area	Medical exemptions [†]		Nonmedical exemptions [†]				Total exemptions [†]			
	No.	%	No. of religious exemptions	No. of philosophic exemptions	Total no.	%	Total no.	2013–14 (%)	2012–13 (%)	Percentage point difference
Utah	94	0.2	16	2,296	2,312	4.2	2,406	4.4	3.8	0.6
Vermont	11	0.2	13	399	412	6.1	423	6.2	6.1	0.1
Virginia	173	0.2	446	[§]	446	0.4	619	0.6	0.5	-0.5
Washington ^{§§}	1,035	1.2	311	2,866	3,177	3.6	4,212	4.7	4.6	0.1
West Virginia	35	0.2	[¶]	[§]			35	0.2	1.2	-1.0
Wisconsin	103	0.1	373	3,042	3,415	4.8	3,519	4.9	4.5	0.4
Wyoming	NA				NA		NA	NA	2.3	NA
Median ^{¶¶}		0.2				1.7		1.8	1.8	0.0
American Samoa	NA				NA		NA	NA	NA	NA
Guam	0	<0.1	1	[§]	1	<0.1	1	<0.1	<0.1	0.0
Marshall Islands	NA				NA		NA	NA	NA	NA
Micronesia	NA				NA		NA	NA	NA	NA
N. Mariana Islands	0	0.0	0	0	0	0.0	0	0.0	0.1	-0.1
Palau	NA				NA		NA	NA	0.6	NA
Puerto Rico	0	<0.1	0	[§]	0	<0.1	0	<0.1	<0.1	0.0
U.S. Virgin Islands	0	0.0	17	[§]	17	1.1	17	1.1	0.6	0.5

Abbreviation: NA = not available (i.e., not collected or reported to CDC).

* Estimates are adjusted for nonresponse and sampling design where appropriate, except where complete data were unavailable. Percentages for Delaware, Houston, Virginia, and Puerto Rico are approximations.

[†] Medical and nonmedical exemptions might not be mutually exclusive. Some children might have both medical and nonmedical exemptions. Total exemptions is the number of children with an exemption. Temporary exemptions are included in the total for South Carolina, South Dakota, and Washington.

[§] Exemptions because of philosophic reasons are not allowed.

[¶] Exemptions because of religious reasons are not allowed.

^{**} Lower bounds of the percentage of children with any exemptions, estimated using the individual vaccines with the highest number of exemptions are, for Illinois, 0.3% with medical exemptions, 1.0% with religious exemptions, and 1.3% for total exemptions, and for Missouri, 0.2% with medical exemptions, 1.6% with religious exemptions, and 1.8% for total exemptions. For Minnesota, the lower bounds of the percentage of children with any exemptions, estimated using the number of children exempt for all vaccines, are <0.1% with medical exemptions, 1.7% with religious exemptions, and 1.7% for total exemptions.

^{††} Religious and philosophic exemptions are not reported separately.

^{§§} Includes both temporary and permanent medical exemptions.

^{¶¶} The median is the center of the estimates in the distribution. The median does not include Houston, Guam, the Commonwealth of the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands.

reporting program or between school years for the same program. Methods and times for data collection differed, as did requirements for vaccinations and exemptions. Fifth, some programs (Delaware, Houston, Virginia, and Puerto Rico) were unable to provide detailed information needed to weight and analyze their data in the most statistically appropriate way, limiting the validity of their reported estimates. Finally, in adjusting data collected using school or student census methods to account for nonresponse, it was assumed that nonresponders and responders of the same school type had similar vaccination coverage and exemption rates.

State and local school vaccination assessments might detect local areas of undervaccination where disease transmission is more likely to occur. These data are most useful when the assessment is accurate and reliable. Use of statistically appropriate sampling methods and access to provider-reported vaccination data in an IIS can streamline the data collection process while providing accurate local-level data, allowing health departments to appropriately direct vaccination efforts during outbreaks of vaccine-preventable disease and identify schools and communities potentially at higher risk for

vaccine-preventable disease transmission. Accurate local-level data can also be used by health departments and schools to focus health communication and other interventions that protect children and the community at large against vaccine-preventable diseases.

Acknowledgments

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