

**Mission:**

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



**Rick Scott**  
Governor

**John H. Armstrong, MD, FACS**  
State Surgeon General & Secretary

**Vision:** To be the Healthiest State in the Nation

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**INTEROFFICE MEMORANDUM**

**DATE:** December 16, 2014  
**TO:** County Health Department Directors/Administrators  
**FROM:** Celeste Philip, M.D., M.P.H.   
Deputy Secretary for Health  
**SUBJECT:** Survey of Immunization Levels in Two-Year-Old Children (2014)

**INFORMATION ONLY**

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In October 2014, the Immunization Section completed an annual immunization survey of 1,740 randomly selected two-year-old children born in Florida. The survey provides estimated immunization levels for 20 selected counties, as well as statewide results (see Enclosure 1).

Field staff conducted the survey with assistance from county health department (CHD) personnel, private physicians, and parents. Of the initial 2,005 survey participants, 1,740 remained after excluding for adoption, death, those whose parents refused to participate, and others who could not be located. The analysis of this survey, as well as the data collection and management, was provided through the Florida State Health Online Tracking System (Florida SHOTS).

The 2014 statewide coverage rate for the basic 4:3:1:3:3:1 (four DTaP, three polio, one MMR, three Hib, three Hepatitis B, and one Varicella) immunization series is 85.65%, as compared to the 2013 rate of 86.72%. The 2014 coverage levels for Florida's 20 largest counties ranged from 70.15% to 94.74%, as compared to 77.27% to 95.35% in 2013.

Data is also provided for the 4:3:1:3:3:1:4 immunization series, which includes four doses of pneumococcal conjugate vaccine (PCV). Of the children surveyed, 81.0% received four doses of PCV, reflecting a slight increase from 2013 (see Enclosure 3).

Through immunization, we prevent dangerous outbreaks, and help ensure a healthy future for our children. Florida's childhood immunization service delivery is approximately 75% privatized, and continues to shift from the public sector (see Enclosures 3 and 4). We must focus on the following areas to achieve our state and national goal of 90% coverage levels for two-year-old children for the 4:3:1:3:3:1 immunization series:

- Increase partnerships with managed care organizations and private healthcare providers to promote the *Standards for Pediatric Immunization Practices*, as well as the Florida SHOTS;
- Identify and target interventions toward geographic areas with populations at high risk for under-immunization or "pockets of need" (see Enclosures 5 and 6);

- Continue to develop immunization linkage with the WIC program;
- Conduct quarterly audits, via the Florida SHOTS, to ensure complete immunization coverage of children whose immunization home is a CHD; and
- Regularly schedule automated reminder and recall processes via the Florida SHOTS to improve overall compliance with the recommended immunization schedule, particularly for the fourth dose of DTaP and PCV vaccines.

If you have questions concerning the survey functionality in the Florida SHOTS, please contact Christopher Smith at 850-245-4444, ext. 3390. If you have questions or comments about the survey, or have found other successful methods to improve your community's immunization levels, please contact Amy Wilson at 850-245-4444, ext. 2395.

CP/cha/aw  
Enclosures

cc: Alan B. Pillersdorf, M.D., President  
Florida Medical Association  
Louis St. Petery, M.D., Executive Vice-President  
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Immunization Section  
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Department of Health  
**Immunization Levels in Two-Year-Old Children**  
**By Selected Counties and Statewide**  
**Florida, 2014**

Enclosure 1

County	Sample Size	Survey Participants <sup>5</sup>	No Shots <sup>3</sup>		4:3:1:3:3:1 <sup>1</sup>				4:3:1:3:3:1:4 <sup>2</sup>			
			Complete <sup>4</sup>		Partial		Complete <sup>4</sup>		Partial			
			#	% <sup>6</sup>	#	% <sup>6</sup>	#	% <sup>6</sup>	#	% <sup>6</sup>	#	% <sup>6</sup>
Brevard	130	97	1	1.03% (± 2.0%)	85	87.63% (± 6.6%)	11	11.34% (± 6.3%)	81	83.51% (± 7.4%)	15	15.46% (± 7.2%)
Broward	98	82	2	2.44% (± 3.3%)	67	81.71% (± 8.4%)	13	15.85% (± 7.9%)	63	76.83% (± 9.1%)	17	20.73% (± 8.8%)
Collier	48	42	1	2.38% (± 4.6%)	39	92.86% (± 7.8%)	2	4.76% (± 6.4%)	38	90.48% (± 8.9%)	3	7.14% (± 7.8%)
Dade	118	100	0	0.00% (± 0.0%)	85	85.00% (± 7.0%)	15	15.00% (± 7.0%)	85	85.00% (± 7.0%)	15	15.00% (± 7.0%)
Duval	72	69	1	1.45% (± 2.8%)	53	76.81% (± 10.0%)	15	21.74% (± 9.7%)	52	75.36% (± 10.2%)	16	23.19% (± 10.0%)
Escambia	70	58	0	0.00% (± 0.0%)	51	87.93% (± 8.4%)	7	12.07% (± 8.4%)	51	87.93% (± 8.4%)	7	12.07% (± 8.4%)
Hillsborough	75	68	1	1.47% (± 2.9%)	64	94.12% (± 5.6%)	3	4.41% (± 4.9%)	63	92.65% (± 6.2%)	4	5.88% (± 5.6%)
Lee	92	87	2	2.30% (± 3.1%)	76	87.36% (± 7.0%)	9	10.34% (± 6.4%)	76	87.36% (± 7.0%)	9	10.34% (± 6.4%)
Leon	135	114	2	1.75% (± 2.4%)	108	94.74% (± 4.1%)	4	3.51% (± 3.4%)	105	92.11% (± 5.0%)	7	6.14% (± 4.4%)
Manatee	36	33	1	3.03% (± 5.8%)	30	90.91% (± 9.8%)	2	6.06% (± 8.1%)	30	90.91% (± 9.8%)	2	6.06% (± 8.1%)
Marion	73	69	1	1.45% (± 2.8%)	63	91.30% (± 6.6%)	5	7.25% (± 6.1%)	62	89.86% (± 7.1%)	6	8.70% (± 6.6%)
Orange	128	100	3	3.00% (± 3.3%)	83	83.00% (± 7.4%)	14	14.00% (± 6.8%)	78	78.00% (± 8.1%)	19	19.00% (± 7.7%)
Osceola	78	67	2	2.99% (± 4.1%)	47	70.15% (± 11.0%)	18	26.87% (± 10.6%)	44	65.67% (± 11.4%)	21	31.34% (± 11.1%)
Palm Beach	122	109	3	2.75% (± 3.1%)	94	86.24% (± 6.5%)	12	11.01% (± 5.9%)	92	84.40% (± 6.8%)	14	12.84% (± 6.3%)
Pasco	102	92	1	1.09% (± 2.1%)	73	79.35% (± 8.3%)	18	19.57% (± 8.1%)	72	78.26% (± 8.4%)	19	20.65% (± 8.3%)
Pinellas	105	94	5	5.32% (± 4.5%)	77	81.91% (± 7.8%)	12	12.77% (± 6.7%)	76	80.85% (± 8.0%)	13	13.83% (± 7.0%)
Polk	104	96	1	1.04% (± 2.0%)	78	81.25% (± 7.8%)	17	17.71% (± 7.6%)	78	81.25% (± 7.8%)	17	17.71% (± 7.6%)
Sarasota	93	76	1	1.32% (± 2.6%)	61	80.26% (± 8.9%)	14	18.42% (± 8.7%)	59	77.63% (± 9.4%)	16	21.05% (± 9.2%)
Seminole	102	86	1	1.16% (± 2.3%)	72	83.72% (± 7.8%)	13	15.12% (± 7.6%)	72	83.72% (± 7.8%)	13	15.12% (± 7.6%)
Volusia	124	110	4	3.64% (± 3.5%)	93	84.55% (± 6.8%)	13	11.82% (± 6.0%)	89	80.91% (± 7.3%)	17	15.45% (± 6.8%)
Other	100	91	2	2.20% (± 3.0%)	82	90.11% (± 6.1%)	7	7.69% (± 5.5%)	80	87.91% (± 6.7%)	9	9.89% (± 6.1%)
Statewide Total <sup>7</sup>	2,005 <sup>8</sup>	1,740	35	1.92% (± 0.4%)	1,481	85.65% (± 1.1%)	224	12.44% (± 1.0%)	1,446	83.62% (± 1.1%)	259	14.47% (± 1.1%)

<sup>1</sup> 4:3:1:3:3:1 = Four or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; 1 or more doses of varicella (VZV) vaccine.

<sup>2</sup> 4:3:1:3:3:1:4 = Four or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; 1 or more doses of varicella (VZV) vaccine, and four or more doses of pneumococcal (PCV) vaccine.

<sup>3</sup> Includes 6 children with no vaccines for the 4:3:1:3:3:1 measure and 29 children with a religious exemption.

<sup>4</sup> Children have received all of the vaccines necessary to complete the measure and do not have a religious exemption.

<sup>5</sup> Does not include 20 children whose parents refused to participate, 241 children who could not be located, and 4 children deleted from the database.

<sup>6</sup> % ± 95% Confidence Level.

<sup>7</sup> Weighted average based on the number of births in each county.

<sup>8</sup> Statewide Sample Size includes 4 deceased or deleted patients.

Department of Health  
**Immunization Levels in Two-Year-Old Children**  
**By Vaccine Provider for 4:3:1:3:3:1**  
**Florida, 2014**

Status	Survey Participants <sup>4</sup>		CHD <sup>2</sup>		CHC <sup>3</sup>		Private Provider		No Source	
	# <sup>1</sup>	%	# <sup>1</sup>	%	# <sup>1</sup>	%	# <sup>1</sup>	%	# <sup>1</sup>	%
Complete <sup>5</sup>	1,481	85.11%	97	86.61%	84	89.36%	1,087	87.10%	213	74.48%
Partial	224	12.87%	15	13.39%	10	10.64%	161	12.90%	38	13.29%
No Shots <sup>6</sup>	35	2.01%	0	0%	0	0%	0	0%	35	12.24%
Statewide Total	1,740	100%	112	100%	94	100%	1,248	100%	286	100%

<sup>1</sup> Children are grouped into the category that provided the majority of the vaccinations for the measure.

<sup>2</sup> County Health Department

<sup>3</sup> Community Health Center

<sup>4</sup> Does not include 20 children whose parents refused to participate, 241 children who could not be located, and 4 children deleted from the database.

<sup>5</sup> Children who have received all vaccines necessary to complete the measure and do not have a religious exemption.

4:3:1:3:3:1 = Four or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; and 1 or more doses of varicella (VZV) vaccine.

<sup>6</sup> Includes 6 children with no vaccines for the 4:3:1:3:3:1 measure and 29 children with a religious exemption.

Department of Health  
**Immunization Levels in Two-Year-Old Children**  
**Historic Data 1995 - 2014**  
**Florida, 2014**

Year	Survey Participants <sup>1</sup> #	Complete <sup>2</sup> %	Partial %	No Shots <sup>3</sup> %	Private Provider <sup>4</sup> %	CHD %	CHC %	No Source %	≥4 DTaP %	≥3 Polio %	MMR %	3 Hib %	3 Hep B %	VZV %	4 PCV %
2014 <sup>5</sup>	1,740	85.6	12.4	1.9	75.1	4.7	5.9	14.3	88.2	95.5	94.4	96.1	94.1	95.2	81.0
2013 <sup>5</sup>	1,752	86.7	11.9	1.4	73.7	7.0	4.6	14.7	89.3	96.2	93.3	95.8	95.0	94.0	80.5
2012 <sup>5</sup>	1,755	83.0	15.5	1.6	76.7	6.0	4.7	12.5	87.8	95.5	92.5	96.7	92.3	93.3	78.3
2011 <sup>5</sup>	1,780	86.1	12.8	1.1	70.9	10.0	4.8	14.3	89.4	95.2	93.6	94.0	94.6	94.9	84.1
2010 <sup>5</sup>	1,712	81.1	18.1	0.7	65.9	9.6	5.4	19.1	88.0	94.2	93.3	91.3	93.0	93.9	80.7
2009 <sup>5,6</sup>	2,168	87.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	1,958	83.4	16.0	0.6	60.1	15.8	3.9	20.2	86.7	93.8	94.5	94.8	94.5	94.0	N/A
2007	1,876	83.2	15.7	1.1	68.3	13.5	2.7	15.5	86.9	92.5	93.4	94.8	94.3	92.8	N/A
2006	1,648	79.2	20.2	0.6	64.8	16.8	2.9	0.1	87.4	93.2	93.3	94.1	93.3	92.3	N/A
2005	1,901	86.6	13.1	0.5	75.2	17.2	4.5	3.0	86.4	93.2	93.7	95.1	94.0	90.6	N/A
2004	1,540	85.3	14.0	0.6	75.6	18.4	4.5	1.4	86.0	92.5	93.1	93.8	92.8	90.0	N/A
2003	1,190	79.4	20.4	0.3	76.1	16.9	3.4	3.6	80.2	93.5	93.9	78.7	92.3	85.3	N/A
2002	1,159	85.3	14.0	0.7	76.0	17.5	3.6	2.8	86.6	93.7	95.8	96.7	92.0	89.2	N/A
2001 <sup>5</sup>	1,092	85.5	14.3	0.2	76.2	16.9	3.0	3.7	87.9	93.6	95.2	96.7	95.2	75.5	N/A
2000 <sup>5</sup>	1,113	86.6	12.5	0.9	70.8	22.3	2.9	3.1	88.8	93.5	95.2	96.9	96.1	57.7	N/A
1999 <sup>5</sup>	1,064	86.2	13.4	0.4	69.6	24.5	2.8	2.6	87.1	94.5	94.0	97.9	94.1	31.3	N/A
1998 <sup>5</sup>	1,498	82.9	16.6	0.5	67.1	27.9	2.8	1.7	86.6	95.0	92.4	94.8	93.0	N/A	N/A
1997 <sup>5</sup>	942	83.0	16.5	0.5	67.4	31.2	N/A	1.4	84.3	94.3	92.5	94.6	87.3	N/A	N/A
1996	1,493	81.6	18.0	0.5	57.2	41.7	N/A	1.0	83.6	93.1	91.1	94.5	79.4	N/A	N/A
1995	1,463	80.0	19.1	0.9	54.5	42.7	N/A	2.8	82.3	87.9	90.2	72.1	61.2	N/A	N/A

<sup>1</sup> Excludes children whose parents refused to participate, or could not be located, or were deleted from the database.

<sup>2</sup> Completion of 4:3:1:3:3:1 series at 24 months of age. 1995-2005 denotes the completion of 4:3:1 measure at 24 months of age. 4:3:1:3:3:1 = Four or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; and 1 or more doses of varicella (VZV) vaccine.

<sup>3</sup> Includes children with no vaccines for the 4:3:1:3:3:1 measure and children with a religious exemption.

<sup>4</sup> Includes military providers.

<sup>5</sup> Complete and partial percentage weighted by the number of births in each strata.

<sup>6</sup> 2009 uses the 4:3:1:3:3:1 measure, excluding the Hib vaccinations. Including the Hib vaccinations, the completion percentage is 81.9%.

Department of Health  
**Immunization Levels in Two-Year-Old Children**  
**Percent Immunized by Specific Vaccine and Provider Type**  
**Florida, 2014**

Provider	Participants w/Shots <sup>1</sup>		1	3	4	1	3	1	3	3	1	1	2	3	4
	# <sup>2</sup>	%	DTaP	DTaP	DTaP	Polio	Polio	MMR	Hib	Hep B	VZV	PCV	PCV	PCV	PCV
CHD <sup>3</sup>	112	6.57%	128	124	124	128	125	122	124	123	120	131	129	128	94
Private Provider	1,248	73.20%	1,199	1,203	1,119	1,197	1,178	1,170	1,194	1,160	1,185	1,168	1,162	1,143	1,014
CHC <sup>4</sup>	94	5.51%	91	93	72	91	94	77	88	92	77	92	95	94	64
Unknown	251	14.72%	286	259	216	284	261	264	256	254	261	301	293	284	251
<b>Statewide Total</b>	<b>1,705</b>	<b>100%</b>	<b>1,704</b>	<b>1,679</b>	<b>1,531</b>	<b>1,700</b>	<b>1,658</b>	<b>1,633</b>	<b>1,662</b>	<b>1,629</b>	<b>1,643</b>	<b>1,692</b>	<b>1,679</b>	<b>1,649</b>	<b>1,423</b>

<sup>1</sup> Does not include 20 children whose parents refused to participate, 241 children who could not be located, and 4 children deleted from the database. Does not include 29 children with a religious exemption. Does not include 6 children with no vaccinations for the 4:3:1:3:3:1 measure.

<sup>2</sup> Children are grouped into the category that provided the majority of the vaccinations for the 4:3:1:3:3:1 measure. 4:3:1:3:3:1 = Four or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; and 1 or more doses of varicella (VZV) vaccine.

<sup>3</sup> County Health Department

<sup>4</sup> Community Health Center

Department of Health  
**Immunization Status in Two-Year-Old Children**  
**By High-Risk Characteristics for 4:3:1:3:3:1**  
**Florida, 2014**

		Mother's Education Level (Years)									
		<12		12		>12		Unknown			
Complete <sup>1</sup>		213	84.19%	451	85.90%	806	84.75%	11	100.00%		
Incomplete <sup>2</sup>		40	15.81%	74	14.10%	145	15.25%	0	0.00%		
		Age of Mother									
		<20		20 - 24		25 - 29		>30+		Unknown	
Complete <sup>1</sup>		105	84.68%	341	85.25%	434	86.11%	593	84.59%	8	72.73%
Incomplete <sup>2</sup>		19	15.32%	59	14.75%	70	13.89%	108	15.41%	3	27.27%
		Number of Siblings in Family									
		3+		2		1		0		Unknown	
Complete <sup>1</sup>		146	81.11%	221	84.03%	479	84.33%	634	87.09%	1	100.00%
Incomplete <sup>2</sup>		34	18.89%	42	15.97%	89	15.67%	94	12.91%	0	0.00%
		Marital Status									
		No		Yes							
Complete <sup>1</sup>		691	85.20%	790	85.04%						
Incomplete <sup>2</sup>		120	14.80%	139	14.96%						
		Trimester of Initiation of Prenatal Care									
		3rd		2nd		1st		Unknown			
Complete <sup>1</sup>		49	80.33%	287	83.67%	1,092	85.78%	53	84.13%		
Incomplete <sup>2</sup>		12	19.67%	56	16.33%	181	14.22%	10	15.87%		

<sup>1</sup> Completion of 4:3:1:3:3:1 consisting of 4 or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; and 1 or more doses of varicella (VZV) vaccine,

<sup>2</sup> Includes children with no shots and children with a religious exemption.

Department of Health  
**Immunization Levels in Two-Year-Old Children  
 By Racial and Ethnic Groups  
 Florida, 2014**

Race/Ethnicity		Sample Size	Survey Participants <sup>5</sup>	No Shots <sup>3</sup>		4:3:1:3:3:1 <sup>1</sup>				4:3:1:3:3:1:4 <sup>2</sup>			
				#	% <sup>6</sup>	Complete <sup>4</sup>		Partial		Complete <sup>4</sup>		Partial	
		#	#	#	% <sup>6</sup>	#	% <sup>6</sup>	#	% <sup>6</sup>	#	% <sup>6</sup>	#	% <sup>6</sup>
By Race	Non-White	812	711	8	1.13% (± 0.8%)	618	86.92% (± 2.5%)	85	11.95% (± 2.4%)	598	84.11% (± 2.7%)	105	14.77% (± 2.6%)
	White	1,189	1,029	27	2.62% (± 1.0%)	863	83.87% (± 2.2%)	139	13.51% (± 2.1%)	848	82.41% (± 2.3%)	154	14.97% (± 2.2%)
	Statewide Total	2,005	1,740	35	2.01% (± 0.7%)	1481	85.11% (± 1.7%)	224	12.87% (± 1.6%)	1446	83.10% (± 1.8%)	259	14.89% (± 1.7%)
By Ethnicity	Black	334	297	6	2.02% (± 1.6%)	265	89.23% (± 3.5%)	26	8.75% (± 3.2%)	256	86.20% (± 3.9%)	35	11.78% (± 3.7%)
	Hispanic	522	463	4	0.86% (± 0.8%)	397	85.75% (± 3.2%)	62	13.39% (± 3.1%)	388	83.80% (± 3.4%)	71	15.33% (± 3.3%)
	White	955	819	23	2.81% (± 1.1%)	682	83.27% (± 2.6%)	114	13.92% (± 2.4%)	669	81.68% (± 2.6%)	127	15.51% (± 2.5%)
	Other	190	161	2	1.24% (± 1.7%)	137	85.09% (± 5.5%)	22	13.66% (± 5.3%)	133	82.61% (± 5.9%)	26	16.15% (± 5.7%)
	Statewide Total	2,005 <sup>7</sup>	1,740	35	2.01% (± 0.7%)	1,481	85.11% (± 1.7%)	224	12.87% (± 1.6%)	1,446	83.10% (± 1.8%)	259	14.89% (± 1.7%)

<sup>1</sup> 4:3:1:3:3:1 = Four or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; 1 or more doses of varicella (VZV) vaccine.

<sup>2</sup> 4:3:1:3:3:1:4 = Four or more doses of any diphtheria and tetanus toxoids and pertussis (DTaP/DTP/DT) vaccine; 3 or more doses of any poliovirus vaccine; 1 or more doses of measles, mumps, and rubella (MMR) vaccine; 3 or more doses of *Haemophilus influenzae* type b (Hib) vaccine; 3 or more doses of hepatitis B vaccine; 1 or more doses of varicella (VZV) vaccine and four or more doses of pneumococcal (PCV) vaccine.

<sup>3</sup> Includes children children with no vaccines for the 4:3:1:3:3:1 measure and 29 children with a religious exemption.

<sup>4</sup> Children have received all vaccines necessary to complete the measure and do not have a religious exemption.

<sup>5</sup> Does not include 20 children whose parents refused to participate, 241 children who could not be located, and 4 children deleted from the database.

<sup>6</sup> % ± 95% Confidence Level.

<sup>7</sup> Statewide Sample Size includes 4 children deleted from the database and not included in the Sample Size Race or Ethnic Groups.