



INTEROFFICE MEMORANDUM

DATE: February 16, 2011

TO: County Health Department Directors/Administrators

FROM: Shairi R. Turner, M.D., M.P.H.
Deputy Secretary for Health

SUBJECT: Survey of Immunization Levels in Two-Year-Old Children (2010)

FOR INFORMATION ONLY –Signature on file

In January 2011, the Bureau of Immunization (BOI) completed an annual immunization survey of 1,716 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 1,980 survey participants, 1,716 remained after excluding for adoption, death, those whose parents refused to participate, and others who could not be located. For the first time, BOI used the Florida State Health Online Tracking System (Florida SHOTS) to calculate survey results. Key benefits of this automation include greater efficiency, improved data quality, rapid compilation and publishing of survey results, and report packaging.

The 2010 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) series is 81.14%. Coverage levels for Florida's 20 largest counties ranged from 63.16% to 92.0%. These rates reflect a slight drop from the 2009 survey's statewide rate of 81.9%, ranging from 64.2% to 93.3%.

Data for the 4:3:1:3:3:1:4 series, which includes four doses of pneumococcal conjugate vaccine (PCV), is also provided. Please note that 80.7% of the children surveyed received four doses of PCV: A significant increase from 2009 (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 two-thirds privatized, and continues to shift from the public sector (see Enclosures 2 and 4). If we are to achieve our state and national goal of 90% coverage levels for two-year-old children for the 4:3:1:3:3:1 series, we must focus our energy and resources on the following key areas:

- Identify and target interventions toward geographic areas with populations at high risk for under-immunization or "pockets of need" (see Enclosure 5);
- Continue to develop immunization linkage with the WIC program;

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- Conduct semi-annual 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.
- Increase partnerships with managed care organizations and private healthcare providers to promote the *Standards for Pediatric Immunization Practices*, as well as the Florida SHOTS.

If you have questions or comments about the survey, or have found other successful methods to improve your community's immunization levels, please contact us at (850) 245-4342. We are eager to share these best practices with other CHDs and private providers.

SRT/cha/aw

Enclosures

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Louis B. St. Petery, Jr., M.D., Executive Vice-President
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Department of Health
Immunization Levels in Two-Year-Old Children
By Selected Counties and Statewide
Florida, 2010
Run Date: January 5, 2011

County	Sample Size	Survey Participants ⁵	No Shots ³		4:3:1:3:3:1 ¹				4:3:1:3:3:1:4 ²			
					Complete ⁴		Partial		Complete ⁴		Partial	
			#	% ⁶	#	% ⁶	#	% ⁶	#	% ⁶	#	% ⁶
Brevard	84	76	2	2.63% (± 3.6%)	62	81.58% (± 8.7%)	12	15.79% (± 8.2%)	58	76.32% (± 9.6%)	16	21.05% (± 9.2%)
Broward	52	46	0	0.00% (± 0.0%)	39	84.78% (± 10.4%)	7	15.22% (± 10.4%)	38	82.61% (± 11.0%)	8	17.39% (± 11.0%)
Collier	87	75	1	1.33% (± 2.6%)	62	82.67% (± 8.6%)	12	16.00% (± 8.3%)	60	80.00% (± 9.1%)	14	18.67% (± 8.8%)
Dade	62	50	0	0.00% (± 0.0%)	46	92.00% (± 7.5%)	4	8.00% (± 7.5%)	40	80.00% (± 11.1%)	10	20.00% (± 11.1%)
Duval	117	105	0	0.00% (± 0.0%)	79	75.24% (± 8.3%)	26	24.76% (± 8.3%)	76	72.38% (± 8.6%)	29	27.62% (± 8.6%)
Escambia	112	96	1	1.04% (± 2.0%)	71	73.96% (± 8.8%)	24	25.00% (± 8.7%)	70	72.92% (± 8.9%)	25	26.04% (± 8.8%)
Hillsborough	71	61	1	1.64% (± 3.2%)	48	78.69% (± 10.3%)	12	19.67% (± 10.0%)	44	72.13% (± 11.3%)	16	26.23% (± 11.0%)
Lee	135	109	1	0.92% (± 1.8%)	91	83.49% (± 7.0%)	17	15.60% (± 6.8%)	90	82.57% (± 7.1%)	18	16.51% (± 7.0%)
Leon	91	84	2	2.38% (± 3.3%)	70	83.33% (± 8.0%)	12	14.29% (± 7.5%)	65	77.38% (± 8.9%)	17	20.24% (± 8.6%)
Manatee	104	88	0	0.00% (± 0.0%)	76	86.36% (± 7.2%)	12	13.64% (± 7.2%)	71	80.68% (± 8.2%)	17	19.32% (± 8.2%)
Marion	85	74	1	1.35% (± 2.6%)	64	86.49% (± 7.8%)	9	12.16% (± 7.4%)	62	83.78% (± 8.4%)	11	14.86% (± 8.1%)
Orange	141	117	0	0.00% (± 0.0%)	89	76.07% (± 7.7%)	28	23.93% (± 7.7%)	84	71.79% (± 8.2%)	33	28.21% (± 8.2%)
Osceola	112	95	2	2.11% (± 2.9%)	60	63.16% (± 9.7%)	33	34.74% (± 9.6%)	54	56.84% (± 10.0%)	39	41.05% (± 9.9%)
Palm Beach	109	95	2	2.11% (± 2.9%)	72	75.79% (± 8.6%)	21	22.11% (± 8.3%)	72	75.79% (± 8.6%)	21	22.11% (± 8.3%)
Pasco	66	58	1	1.72% (± 3.4%)	45	77.59% (± 10.7%)	12	20.69% (± 10.4%)	41	70.69% (± 11.7%)	16	27.59% (± 11.5%)
Pinellas	78	74	2	2.70% (± 3.7%)	61	82.43% (± 8.7%)	11	14.86% (± 8.1%)	58	78.38% (± 9.4%)	14	18.92% (± 8.9%)
Polk	103	98	0	0.00% (± 0.0%)	70	71.43% (± 8.9%)	28	28.57% (± 8.9%)	67	68.37% (± 9.2%)	31	31.63% (± 9.2%)
Sarasota	105	92	4	4.35% (± 4.2%)	74	80.43% (± 8.1%)	14	15.22% (± 7.3%)	72	78.26% (± 8.4%)	16	17.39% (± 7.7%)
Seminole	90	74	1	1.35% (± 2.6%)	56	75.68% (± 9.8%)	17	22.97% (± 9.6%)	54	72.97% (± 10.1%)	19	25.68% (± 10.0%)
Volusia	86	67	1	1.49% (± 2.9%)	53	79.10% (± 9.7%)	13	19.40% (± 9.5%)	50	74.63% (± 10.4%)	16	23.88% (± 10.2%)
Other	90	82	0	0.00% (± 0.0%)	66	80.49% (± 8.6%)	16	19.51% (± 8.6%)	62	75.61% (± 9.3%)	20	24.39% (± 9.3%)
Statewide Total ⁷	1,980 ⁸	1,716	22	0.75% (± 0.2%)	1,354	81.14% (± 1.3%)	340	18.11% (± 1.3%)	1,288	76.15% (± 1.5%)	406	23.10% (± 1.5%)

¹ 4:3:1:3:3:1 = Four or more doses of DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, and one or more doses of Varicella.

² 4:3:1:3:3:1:4 = Four or more doses of DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, one or more doses of Varicella, and four or more doses of Pneumococcal.

³ Has no shots for the 4:3:1:3:3:1 measure. Includes 16 children with a religious exemption.

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

⁵ Does not include 46 children that refused to participate, 215 children that could not be located, and 3 children deceased or deleted from the database.

⁶ % ± 95% Confidence Level.

⁷ Weighted average based on the number of births in each county.

⁸ Statewide Sample Size includes 3 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, 2010
Run Date: January 5, 2011

Status	Survey Participants ⁴	% of Survey Participants	CHD ²		CHC ³		Private Provider		No Source	
			# ¹	%	# ¹	%	# ¹	%	# ¹	%
Complete ⁵	1354	78.90%	166	79.81%	100	81.30%	831	79.75%	257	74.93%
Partial	340	19.81%	42	20.19%	23	18.70%	211	20.25%	64	18.66%
No Shots ⁶	22	1.28%	0	0.00%	0	0.00%	0	0.00%	22	6.41%
Statewide Total	1,716	100.00%	208	100.00%	123	100.00%	1,042	100.00%	343	100.00%

¹ Children are grouped into the category that provided the majority of the vaccinations for the measure.

² County Health Department.

³ Community Health Center.

⁴ Does not include 46 children that refused to participate, 215 children that could not be located, and 3 children deceased or deleted from the database.

⁵ Children that have received all of the vaccines necessary to complete the 4:3:1:3:3:1 measure and do not have a religious exemption.

4:3:1:3:3:1 = Four or more doses of DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, and one or more doses of Varicella.

⁶ Includes 6 children with no vaccines for the 4:3:1:3:3:1 measure and 16 children with a religious exemption.

Department of Health
Immunization Levels in Two-Year-Old Children
Historic Data 1990 - 2010 for 4:3:1:3:3:1
Florida, 2010
Run Date: January 5, 2011

Year	Survey Participants ⁵ #	Complete ² %	Partial %	No Shots ³ %	Private Provider ¹ %	CHD %	CHC %	No Source %	4+ DTaP %	3+ Polio %	MMR %	3 Hib ⁴ %	3 Hep B %	VZV %	4 PCV %
2010 ⁶	1,716	81.1	18.1	.7	65.8	9.6	5.4	19.1	88	94.2	93.3	91.3	93	93.9	80.7
2009 ⁶	2,168	87.2 ⁷	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 ⁶	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 ⁶	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 ⁶	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 ⁶	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 ⁶	9,42	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
1994	553	76.5	22.4	1.1	58.0	41.7	N/A	0.3	78.1	86.3	88.5	77.5	N/A	N/A	N/A
1993	591	73.3	26.2	0.5	52.9	46.9	N/A	0.2	75.5	80.0	88.5	91.0	N/A	N/A	N/A
1992	549	67.4	31.0	1.6	52.8	45.9	N/A	1.3	69.0	77.0	89.3	83.9	N/A	N/A	N/A
1991	497	63.2	35.6	1.2	57.5	40.6	N/A	0.6	65.4	75.4	86.2	55.1	N/A	N/A	N/A
1990	532	66.0	32.7	1.3	54.5	44.2	N/A	1.3	75.9	82.0	89.7	59.2	N/A	N/A	N/A

¹ Military totals for all years have been included in the Private Provider category.

² Completion of 4:3:1:3:3:1 series at 24 months of age. 1990-2005 denotes the completion of 4:3:1 measure at 24 months of age. 4:3:1:3:3:1 = Four or more doses of DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, and one or more doses of Varicella.

³ Includes children with no vaccines for the measure and children with a religious exemption.

⁴ Only one dose of *Haemophilus Influenzae* type b vaccine (Hib) vaccine for years prior to 1994.

⁵ Excludes children that refused to participate, or could not be located, or were deceased or deleted from the database.

⁶ Complete and partial percentage weighted by the number of births in each strata.

⁷ 2009 illustrates the 4:3:1:3:3:1 measure, excluding the Hib vaccinations (4:3:1:X:3:1). Completion percentage including the Hib vaccinations is 81.9%.

Department of Health
Immunization Levels in Two-Year-Olds
Percent Immunized by Specific Vaccine and Provider Type
Florida, 2010
Run Date: January 5, 2011

Provider	Participants w/Shots ¹		DTaP 1	DTaP 3	DTaP 4	Polio 1	Polio 3	MMR	Hib 3	Hep B 3	Varicella	PCV 1	PCV 2	PCV 3	PCV 4
	# ²	%													
CHD ³	208	12.28%	216	201	234	217	226	244	220	225	238	217	216	208	197
Private Provider	1,042	61.51%	994	1003	910	989	957	954	936	923	975	993	1009	976	874
CHC ⁴	123	7.26%	129	114	103	128	116	113	104	116	113	128	122	113	94
Unknown	321	18.95%	352	327	218	352	303	266	284	317	266	339	309	305	203
Statewide Total	1,694	100.00%	1,691	1,645	1,465	1,686	1,602	1,577	1,544	1,581	1,592	1,677	1,656	1,602	1,368

¹ Does not include 46 children that refused to participate, 215 children that could not be located, and 3 children deceased or deleted from the database. Does not include 16 children with a religious exemption. Does not include 6 children with no vaccinations for the 4:3:1:3:3:1 measure.

² 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 DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, and one or more doses of Varicella.

³ County Health Department.

⁴ 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, 2010
Run Date: January 5, 2011

		Mother's Education Level (Years)									
		<12		12		>12		Unknown			
Complete ¹		223	75.34%	428	78.10%	623	79.87%	80	86.96%		
Incomplete ²		73	24.66%	120	21.90%	157	20.13%	12	13.04%		
		Age of Mother									
		<20		20 - 24		25 - 29		>30+		Unknown	
Complete ¹		165	78.57%	356	76.89%	362	78.52%	465	80.87%	6	85.71%
Incomplete ²		45	21.43%	107	23.11%	99	21.48%	110	19.13%	1	14.29%
		Number of Siblings in Family									
		3+		2		1		0		Unknown	
Complete ¹		133	74.72%	200	73.26%	402	77.16%	618	83.40%	1	33.33%
Incomplete ²		45	25.28%	73	26.74%	119	22.84%	123	16.60%	2	66.67%
		Marital Status									
		No		Yes							
Complete ¹		672	78.69%	682	79.12%						
Incomplete ²		182	21.31%	180	20.88%						
		Trimester of Initiation of Prenatal Care									
		3rd		2nd		1st				Unknown	
Complete ¹		70	71.43%	274	79.65%	703	80.25%			307	77.14%
Incomplete ²		28	28.57%	70	20.35%	173	19.75%			91	22.86%

¹ Completion of 4:3:1:3:3:1 consisting of Four or more doses of DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, and one or more doses of Varicella.

² 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, 2010
Run Date: January 5, 2011

	Sample Size	Survey Participants ⁵	No Shots ³		4:3:1:3:3:1 ¹				4:3:1:3:3:1:4 ²				
					Complete ⁴		Partial		Complete ⁴		Partial		
			#	% ⁶	#	% ⁶	#	% ⁶	#	% ⁶	#	% ⁶	
By Race													
Non-White	671	605	2	0.33% (± 0.5%)	477	78.84% (± 3.3%)	126	20.83% (± 3.2%)	457	75.54% (± 3.4%)	146	24.13% (± 3.4%)	
White	1,306	1,111	20	1.80% (± 0.8%)	877	78.94% (± 2.4%)	214	19.26% (± 2.3%)	831	74.80% (± 2.6%)	260	23.40% (± 2.5%)	
Statewide Total	1,980 ⁷	1,716	22	1.28% (± 0.5%)	1,354	78.90% (± 1.9%)	340	19.81% (± 1.9%)	1,288	75.06% (± 2.0%)	406	23.66% (± 2.0%)	
By Ethnicity													
Black	307	282	1	0.35% (± 0.7%)	220	78.01% (± 4.8%)	61	21.63% (± 4.8%)	212	75.18% (± 5.0%)	69	24.47% (± 5.0%)	
Hispanic	549	471	2	0.42% (± 0.6%)	391	83.01% (± 3.4%)	78	16.56% (± 3.4%)	370	78.56% (± 3.7%)	99	21.02% (± 3.7%)	
White	930	789	18	2.28% (± 1.0%)	609	77.19% (± 2.9%)	162	20.53% (± 2.8%)	578	73.26% (± 3.1%)	193	24.46% (± 3.0%)	
Other	191	174	1	0.57% (± 1.1%)	134	77.01% (± 6.3%)	39	22.41% (± 6.2%)	128	73.56% (± 6.6%)	45	25.86% (± 6.5%)	
Statewide Total	1,980 ⁷	1,716	22	1.28% (± 0.5%)	1,354	78.90% (± 1.9%)	340	19.81% (± 1.9%)	1,288	75.06% (± 2.0%)	406	23.66% (± 2.0%)	

¹ 4:3:1:3:3:1 = Four or more doses of DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, and one or more doses of Varicella.

² 4:3:1:3:3:1:4 = Four or more doses of DTaP, three or more doses of poliovirus vaccine, one or more doses of MMR, three or more doses of Hib, three or more doses of Hepatitis B, one or more doses of Varicella, and four or more doses of Pneumococcal.

³ Has no shots for the 4:3:1:3:3:1 measure. Includes 16 children with a religious exemption.

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

⁵ Does not include 46 children that refused to participate, 215 children that could not be located, and 3 children deceased or deleted from the database.

⁶ % ± 95% Confidence Level.

⁷ Statewide Sample Size includes 3 children deceased or deleted from the database and not included in the Sample Size Race or Ethnic Groups.