



Rick Scott
Governor

H. Frank Farmer, Jr., MD, PhD, FACP
State Surgeon General

INTEROFFICE MEMORANDUM

DATE: December 15, 2011
TO: County Health Department Directors/Administrators
FROM: Steven L. Harris, M.D., M.Sc.
Deputy Secretary for Health
SUBJECT: Survey of Immunization Levels in Two-Year-Old Children (2011)

FOR INFORMATION ONLY

In November 2011, the Bureau of Immunization (BOI) completed an annual immunization survey of 1,780 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 2,064 survey participants, 1,780 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 2011 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 86.12%, as compared to the 2010 rate of 81.14%. The 2011 coverage levels for Florida's 20 largest counties ranged from 77.66% to 93.15%, as compared to the 2010 range of 63.16% to 92%. This data reflects a significant increase in immunization coverage for Florida's two-year-old population.

Data for the 4:3:1:3:3:1:4 immunization series, which includes four doses of pneumococcal conjugate vaccine (PCV), is also provided. Of the children surveyed, 84.1% received four doses of PCV, also a significant increase from 2010 (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, 3, and 4). 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, we must focus on the following areas:

- 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;

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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;
- 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; and
- 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 concerning the survey functionality in the Florida SHOTS, please contact Beth Cox at (850) 245-4444, ext. 2342. If you have other 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. We are eager to share these best practices with other CHDs and private providers.

SLH/cha/aw
Enclosures

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Immunization Levels in Two-Year-Old Children By Selected Counties and Statewide Florida, 2011

County	Sample Size	Survey Participants ¹	No Shots ²		4:3:1:3:3:1 ³				4:3:1:3:3:1:4 ⁴			
	#	#	#	% ⁶	Complete ⁵		Partial		Complete ⁵		Partial	
					#	% ⁶	#	% ⁶	#	% ⁶	#	% ⁶
Brevard	86	61	1	1.64% (± 3.2%)	53	86.89% (± 8.5%)	7	11.48% (± 8.0%)	51	83.61% (± 9.3%)	9	14.75% (± 8.9%)
Broward	90	80	2	2.50% (± 3.4%)	72	90.00% (± 6.6%)	6	7.50% (± 5.8%)	70	87.50% (± 7.2%)	8	10.00% (± 6.6%)
Collier	81	73	1	1.37% (± 2.7%)	68	93.15% (± 5.8%)	4	5.48% (± 5.2%)	67	91.78% (± 6.3%)	5	6.85% (± 5.8%)
Dade	58	52	0	0.00% (± 0.0%)	45	86.54% (± 9.3%)	7	13.46% (± 9.3%)	42	80.77% (± 10.7%)	10	19.23% (± 10.7%)
Duval	121	108	1	0.93% (± 1.8%)	85	78.70% (± 7.7%)	22	20.37% (± 7.6%)	83	76.85% (± 8.0%)	24	22.22% (± 7.8%)
Escambia	107	92	4	4.35% (± 4.2%)	72	78.26% (± 8.4%)	16	17.39% (± 7.7%)	71	77.17% (± 8.6%)	17	18.48% (± 7.9%)
Hillsborough	118	102	3	2.94% (± 3.3%)	82	80.39% (± 7.7%)	17	16.67% (± 7.2%)	81	79.41% (± 7.8%)	18	17.65% (± 7.4%)
Lee	94	81	0	0.00% (± 0.0%)	65	80.25% (± 8.7%)	16	19.75% (± 8.7%)	64	79.01% (± 8.9%)	17	20.99% (± 8.9%)
Leon	75	68	0	0.00% (± 0.0%)	62	91.18% (± 6.7%)	6	8.82% (± 6.7%)	61	89.71% (± 7.2%)	7	10.29% (± 7.2%)
Manatee	72	65	1	1.54% (± 3.0%)	59	90.77% (± 7.0%)	5	7.69% (± 6.5%)	58	89.23% (± 7.5%)	6	9.23% (± 7.0%)
Marion	70	62	2	3.23% (± 4.4%)	57	91.94% (± 6.8%)	3	4.84% (± 5.3%)	55	88.71% (± 7.9%)	5	8.06% (± 6.8%)
Orange	132	108	0	0.00% (± 0.0%)	94	87.04% (± 6.3%)	14	12.96% (± 6.3%)	84	77.78% (± 7.8%)	24	22.22% (± 7.8%)
Osceola	123	94	0	0.00% (± 0.0%)	73	77.66% (± 8.4%)	21	22.34% (± 8.4%)	72	76.60% (± 8.6%)	22	23.40% (± 8.6%)
Palm Beach	124	114	0	0.00% (± 0.0%)	101	88.60% (± 5.8%)	13	11.40% (± 5.8%)	98	85.96% (± 6.4%)	16	14.04% (± 6.4%)
Pasco	99	80	1	1.25% (± 2.4%)	66	82.50% (± 8.3%)	13	16.25% (± 8.1%)	66	82.50% (± 8.3%)	13	16.25% (± 8.1%)
Pinellas	87	78	4	5.13% (± 4.9%)	66	84.62% (± 8.0%)	8	10.26% (± 6.7%)	65	83.33% (± 8.3%)	9	11.54% (± 7.1%)
Polk	116	106	0	0.00% (± 0.0%)	84	79.25% (± 7.7%)	22	20.75% (± 7.7%)	84	79.25% (± 7.7%)	22	20.75% (± 7.7%)
Sarasota	82	77	1	1.30% (± 2.5%)	67	87.01% (± 7.5%)	9	11.69% (± 7.2%)	65	84.42% (± 8.1%)	11	14.29% (± 7.8%)
Seminole	111	91	3	3.30% (± 3.7%)	81	89.01% (± 6.4%)	7	7.69% (± 5.5%)	80	87.91% (± 6.7%)	8	8.79% (± 5.8%)
Volusia	109	90	1	1.11% (± 2.2%)	75	83.33% (± 7.7%)	14	15.56% (± 7.5%)	71	78.89% (± 8.4%)	18	20.00% (± 8.3%)
Other	109	98	0	0.00% (± 0.0%)	88	89.80% (± 6.0%)	10	10.20% (± 6.0%)	86	87.76% (± 6.5%)	12	12.24% (± 6.5%)
Statewide Total	2,064 ⁷	1,780	25	1.07% (± 0.3%)	1,515	86.12% (± 1.1%)	240	12.81% (± 1.1%)	1,474	83.17% (± 1.2%)	281	15.77% (± 1.2%)

¹ Does not include 29 children that refused to participate, 252 children that could not be located, and 3 children deceased or deleted from the database.

² Has no shots for the 4:3:1:3:3:1 measure. Includes 21 children with a religious exemption.

³ 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.

⁴ 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.

⁵ Children have received all of the vaccines necessary to complete the measure and do not have a religious exemption.

⁶ Weighted average based on the number of births in each county + 95% Confidence Level

⁷ Statewide Sample Size includes 3 deceased or deleted patients.

Department of Health
Immunization Levels in Two-Year-Old Children
By Vaccine Provider¹ for 4:3:1:3:3:1²
Florida, 2011

Status	Survey Participants ³		CHD ⁴		CHC ⁵		Private Provider		No Source	
	#	%	#	%	#	%	#	%	#	%
Complete ⁶	1,515	85.11%	184	87.62%	85	89.47%	1,039	86.08%	207	77.24%
Partial	240	13.48%	26	12.38%	10	10.53%	168	13.92%	36	13.43%
No Shots ⁷	25	1.40%	0	0.00%	0	0.00%	0	0.00%	25	9.33%
Statewide Total	1,780	100%	210	11.8% ⁸	95	5.34% ⁸	1,207	67.81% ⁸	268	15.06% ⁸

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

² 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 Does not include 29 children that refused to participate, 252 children that could not be located, and 3 children deceased or deleted from the database.

⁴ County Health Department

⁵ Community Health Center

⁶ Children that have received all of the vaccines necessary to complete the measure and do not have a religious exemption.

⁷ Includes 4 children with no vaccines for the measure and 21 children with a religious exemption.

⁸ Children by provider category.

Department of Health
Immunization Levels in Two-Year-Old Children
Historic Data 1990 - 2011 for 4:3:1:3:3:1¹
Florida, 2011

Year	Survey Participants ² #	Complete ³ %	Partial %	No Shots ⁴ %	Private Provider ⁵ %	CHD %	CHC %	No Source %	≥4 DTaP %	≥3 Polio %	MMR %	3 Hib ⁶ %	3 Hep B %	VZV %	4 PCV %
2011 ⁷	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 ⁷	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 ⁷	2,168	87.2 ⁸	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 ⁷	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 ⁷	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 ⁷	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 ⁷	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 ⁷	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
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 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 Excludes children that refused to participate, or could not be located, or were deceased or deleted from the database.

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

⁵ Military totals for all years have been included in the Private Provider category.

⁶ Only one dose of Haemophilus Influenzae type b (Hib) vaccine for years prior to 1994.

⁷ Complete and partial percentage weighted by the number of births in each strata.

⁸ 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-Olds
Percent Immunized by Specific Vaccine and Provider Type
Florida, 2011**

Provider	Participants w/Shots ¹		1	3	4	1	3	1	3	3	1	1	2	3	4
	# ²	%	DTaP	DTaP	DTaP	Polio	Polio	MMR	Hib	Hep B	VZV	PCV	PCV	PCV	PCV
CHD ³	210	11.97%	236	230	237	235	237	237	231	242	233	243	227	231	207
Private Provider	1,207	68.77%	1,123	1,149	1,053	1,125	1,125	1,132	1,134	1,118	1,150	1,124	1,165	1,139	1,026
CHC ⁴	95	5.41%	77	95	96	79	96	107	93	99	107	98	102	99	97
Unknown	243	13.85%	317	235	182	309	220	178	203	213	178	278	229	211	171
Statewide Total	1,755	100%	1,753	1,709	1,568	1,748	1,678	1,654	1,661	1,672	1,668	1,743	1,723	1,680	1,501

¹ Does not include 29 children that refused to participate, 252 children that could not be located, and 3 children deceased or deleted from the database. Does not include 21 children with a religious exemption, and 4 children with no 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.

² Children are grouped into the category that provided the majority of the vaccinations for the 4:3:1:3:3:1 measure.

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, 2011**

		Mother's Education Level (Years)									
		<12		12		>12		Unknown			
Complete ¹		254	85.52%	489	84.75%	678	83.81%	94	96.91%		
Incomplete ²		43	14.48%	88	15.25%	131	16.19%	3	3.09%		
		Age of Mother									
		<20		20 - 24		25 - 29		≥30		Unknown	
Complete ¹		191	86.04%	428	85.94%	390	85.34%	500	84.03%	6	75.00%
Incomplete ²		31	13.96%	70	14.06%	67	14.66%	95	15.97%	2	25.00%
		Number of Siblings in Family									
		≥3		2		1		0			
Complete ¹		125	79.11%	226	82.48%	473	84.16%	691	87.91%		
Incomplete ²		33	20.89%	48	17.52%	89	15.84%	95	12.09%		
		Marital Status									
		No		Yes							
Complete ¹		763	86.51%	752	83.74%						
Incomplete ²		119	13.49%	146	16.26%						
		Trimester of Initiation of Prenatal Care									
		3rd		2nd		1st		Unknown			
Complete ¹		67	73.63%	302	86.53%	775	84.42%	371	87.91%		
Incomplete ²		24	26.37%	47	13.47%	143	15.58%	51	12.09%		

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.

³ High risk

Department of Health
**Immunization Levels in Two-Year-Old Children
 By Racial and Ethnic Groups
 Florida, 2011**

Race/Ethnicity		Sample Size	Survey Participants ⁵	No Shots ³		4:3:1:3:3:1 ¹				4:3:1:3:3:1:4 ²			
				#	% ⁶	Complete ⁴		Partial		Complete ⁴		Partial	
		#	#	#	% ⁶	#	% ⁶	#	% ⁶	#	% ⁶	#	% ⁶
By Race	Non-White	656	577	2	0.35% (± 0.5%)	497	86.14% (± 2.8%)	78	13.52% (± 2.8%)	481	83.36% (± 3.0%)	94	16.29% (± 3.0%)
	White	1,405	1203	23	1.91% (± 0.8%)	1,018	84.62% (± 2.0%)	162	13.47% (± 1.9%)	993	82.54% (± 2.1%)	187	15.54% (± 2.0%)
	Statewide Total	2,064 ⁷	1,780	25	1.40% (± 0.5%)	1,515	85.11% (± 1.7%)	240	13.48% (± 1.6%)	1,474	82.81% (± 1.8%)	281	15.79% (± 1.7%)
By Ethnicity	Black	336	304	1	0.33% (± 0.6%)	260	85.53% (± 4.0%)	43	14.14% (± 3.9%)	253	83.22% (± 4.2%)	50	16.45% (± 4.2%)
	Hispanic	589	510	2	0.39% (± 0.5%)	445	87.25% (± 2.9%)	63	12.35% (± 2.9%)	432	84.71% (± 3.1%)	76	14.90% (± 3.1%)
	White	1,006	858	22	2.56% (± 1.1%)	717	83.57% (± 2.5%)	119	13.87% (± 2.3%)	699	81.47% (± 2.6%)	137	15.97% (± 2.5%)
	Other	130	108	0	0.00% (± 0.0%)	93	86.11% (± 6.5%)	15	13.89% (± 6.5%)	90	83.33% (± 7.0%)	18	16.67% (± 7.0%)
	Statewide Total	2,064 ⁷	1,780	25	1.40% (± 0.5%)	1,515	85.11% (± 1.7%)	240	13.48% (± 1.6%)	1,474	82.81% (± 1.8%)	281	15.79% (± 1.7%)

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 21 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 29 children that refused to participate, 252 children that could not be located, and 3 children deceased or deleted from the database.

⁶ Unweighted average + 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.