

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

INTEROFFICE MEMORANDUM

DATE: February 18, 2016
TO: County Health Department Directors/Administrators
FROM: Celeste Philip, MD, MPH *for*
Deputy Secretary for Health
SUBJECT: Survey of Immunization Levels in 2-Year-Old Children (2015)

INFORMATION ONLY

In November 2015, the Immunization Section completed an annual immunization survey of 1,828 randomly selected 2-year-old children born in Florida. The Florida State Health Online Tracking System (Florida SHOTS) provided the data collection and analysis for this survey. The Florida Department of Health's (Department) Bureau of Vital Statistics, *Resident Live Births* for January 2013, was the source of the target population.

Of the initial sample of 2,070 survey participants, 1,828 remained after excluding for adoption, death, those whose parents refused to participate, and those who could not be located. The goal of this survey is to determine estimated immunization coverage levels at 24 months of age, statewide, and for 20 of the 67 counties whose birth counts are consistently higher (see Enclosure 1).

Children from 24 to 35 months of age should complete the 4:3:1:3:3:1:4 (four DTaP, three polio, one MMR, three Hib, three hepatitis B, one Varicella, and four doses of pneumococcal conjugate [PCV]) immunization series by 24 months of age. This is recommended by the Advisory Committee on Immunization Practices (ACIP) and is consistent with our Immunization Program's annual goals. **The 2015 statewide immunization coverage rate based on the 4:3:1:3:3:1:4 immunization series is 84.50 percent.**

The Department's Agency Strategic Plan objective for increasing the percent of 2-year-old children who are fully immunized, is based on the basic 4:3:1:3:3:1 immunization series, which does not include four doses of PCV. **The 2015 statewide immunization coverage rate for the 4:3:1:3:3:1 immunization series is 85.54 percent.** The 20 selected counties ranged from 68.81 percent (Pasco) to 92.31 percent (Leon), with a median rate of 85.04 percent (see Enclosure 1). The national coverage goal is 90 percent.

Enclosure 2 breaks down the number and percentage of children by immunization status and provider type. The private sector (71.06 percent) continues to lead in service delivery of childhood immunizations, while local county health departments (CHD) provide the least (5.69 percent) as the safety net provider (provider of last resort). Column *CHD%* in Enclosure 3 shows the continual movement of this trend over the past two decades.

Florida Department of Health

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Florida continues to fall short of the 90 percent goal due to the number of children who do not receive the fourth dose of DTaP by 24 months of age, as evidenced by Enclosure 3, column $\geq 4DTaP$, for years 2004 through 2015. All vaccines in the 4:3:1:3:3:1 immunization series, minus the fourth dose of DTaP, show a coverage rate of ≥ 90 percent. Enclosure 4 shows the number of doses given by provider type, per specific dose number. The fourth dose of DTaP was the least given (1,611 doses) in the basic series, with the third dose of hepatitis B a close second (1,695 doses).

Enclosure 5 provides data for five high-risk indicators known to impede timely childhood immunizations. For example, the "Age of Mother" indicator shows only 79.59 percent of the children belonging to mothers under 20 years of age completed the series, compared to 86.71 percent from mothers age 25 to 29, and 84.32 percent from mothers 30 years and older.

Enclosure 6 provides a comparison by racial and ethnic groups. Of the survey participants, non-Whites (87.23 percent) completed the series, compared to Whites (81.09 percent). Children with a religious exemption from immunization are a leading factor in this discrepancy.

We must focus on the following areas to achieve our national immunization coverage goal of 90 percent among Florida's 2-year-old children:

- Educate local public, private health care providers, and community groups on the importance of adhering to the ACIP Recommended Immunization Schedule for Children 0–18 years.
- Develop and implement interventions toward geographic areas with populations at high risk for under immunization or pockets of need (see Enclosures 5 and 6).
- Monitor WIC compliance with TA-WIC1 (*Technical Assistance Guidelines: Guidelines for Integration of WIC With the Immunization Program*) during CHD's QI/Clinical audits.
- Conduct quarterly audits, via Florida SHOTS, to ensure complete immunization coverage of children whose immunization home is a CHD.
- Maintain partnerships with managed care organizations and private health care providers to promote the Standards for Pediatric Immunization Practices, as well as Florida SHOTS.
- Regularly schedule automated reminder and recall processes via 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 or comments about the survey, please contact our survey and assessment consultant, Ms. Amy Wilson, at 850-245-4444, ext. 2395.

CP/RG/aw
Enclosures

cc: Ralph J. Nobo, Jr., MD, President
Florida Medical Association

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cc: Continued

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Department of Health
Immunization Levels in 2-Year-Old Children
By Selected Counties and Statewide
Florida, 2015

Enclosure 1

County	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
Brevard	101	83	1	1.20% (± 2.3%)	60	72.29% (± 9.6%)	22	26.51% (± 9.5%)	60	72.29% (± 9.6%)	22	26.51% (± 9.5%)
Broward	142	125	2	1.60% (± 2.2%)	105	84.00% (± 6.4%)	18	14.40% (± 6.2%)	104	83.20% (± 6.6%)	19	15.20% (± 6.3%)
Collier	55	46	1	2.17% (± 4.2%)	41	89.13% (± 9.0%)	4	8.70% (± 8.1%)	40	86.96% (± 9.7%)	5	10.87% (± 9.0%)
Dade	124	114	1	0.88% (± 1.7%)	95	83.33% (± 6.8%)	18	15.79% (± 6.7%)	94	82.46% (± 7.0%)	19	16.67% (± 6.8%)
Duval	139	127	1	0.79% (± 1.5%)	112	88.19% (± 5.6%)	14	11.02% (± 5.4%)	109	85.83% (± 6.1%)	17	13.39% (± 5.9%)
Escambia	86	75	0	0.00% (± 0.0%)	65	86.67% (± 7.7%)	10	13.33% (± 7.7%)	65	86.67% (± 7.7%)	10	13.33% (± 7.7%)
Hillsborough	51	48	0	0.00% (± 0.0%)	41	85.42% (± 10.0%)	7	14.58% (± 10.0%)	40	83.33% (± 10.5%)	8	16.67% (± 10.5%)
Lee	86	78	4	5.13% (± 4.9%)	69	88.46% (± 7.1%)	5	6.41% (± 5.4%)	69	88.46% (± 7.1%)	5	6.41% (± 5.4%)
Leon	44	39	0	0.00% (± 0.0%)	36	92.31% (± 8.4%)	3	7.69% (± 8.4%)	36	92.31% (± 8.4%)	3	7.69% (± 8.4%)
Manatee	62	53	0	0.00% (± 0.0%)	47	88.68% (± 8.5%)	6	11.32% (± 8.5%)	47	88.68% (± 8.5%)	6	11.32% (± 8.5%)
Marion	59	56	2	3.57% (± 4.9%)	46	82.14% (± 10.0%)	8	14.29% (± 9.2%)	45	80.36% (± 10.4%)	9	16.07% (± 9.6%)
Orange	142	117	3	2.56% (± 2.9%)	104	88.89% (± 5.7%)	10	8.55% (± 5.1%)	104	88.89% (± 5.7%)	10	8.55% (± 5.1%)
Osceola	132	112	0	0.00% (± 0.0%)	87	77.68% (± 7.7%)	25	22.32% (± 7.7%)	85	75.89% (± 7.9%)	27	24.11% (± 7.9%)
Palm Beach	104	96	1	1.04% (± 2.0%)	82	85.42% (± 7.1%)	13	13.54% (± 6.8%)	81	84.38% (± 7.3%)	14	14.58% (± 7.1%)
Pasco	115	109	0	0.00% (± 0.0%)	75	68.81% (± 8.7%)	34	31.19% (± 8.7%)	74	67.89% (± 8.8%)	35	32.11% (± 8.8%)
Pinellas	121	105	5	4.76% (± 4.1%)	89	84.76% (± 6.9%)	11	10.48% (± 5.9%)	87	82.86% (± 7.2%)	13	12.38% (± 6.3%)
Polk	116	112	1	0.89% (± 1.7%)	89	79.46% (± 7.5%)	22	19.64% (± 7.4%)	89	79.46% (± 7.5%)	22	19.64% (± 7.4%)
Sarasota	106	89	8	8.99% (± 5.9%)	72	80.90% (± 8.2%)	9	10.11% (± 6.3%)	72	80.90% (± 8.2%)	9	10.11% (± 6.3%)
Seminole	106	87	4	4.60% (± 4.4%)	76	87.36% (± 7.0%)	7	8.05% (± 5.7%)	75	86.21% (± 7.2%)	8	9.20% (± 6.1%)
Volusia	98	81	1	1.23% (± 2.4%)	68	83.95% (± 8.0%)	12	14.81% (± 7.7%)	67	82.72% (± 8.2%)	13	16.05% (± 8.0%)
Other	81	76	1	1.32% (± 2.6%)	69	90.79% (± 6.5%)	6	7.89% (± 6.1%)	68	89.47% (± 6.9%)	7	9.21% (± 6.5%)
Statewide Total ⁷	2,070 ⁸	1,828	36	1.56% (± 0.3%)	1,528	85.54% (± 1.1%)	264	12.89% (± 1.0%)	1,511	84.50% (± 1.1%)	281	13.93% (± 1.1%)

¹ 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.

² 4:3:1:3:3:1:4 = 4:3:1:3:3:1 plus 4 or more doses of pneumococcal conjugate (PCV) vaccine.

³ Has no shots for the 4:3:1:3:3:1 measure. Includes 32 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 Excludes 14 children whose parents refused to participate, 223 children who could not be located, and 5 children 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 5 deceased or deleted patients.

Department of Health
**Immunization Levels in 2-Year-Old Children
 By Vaccine Provider for 4:3:1:3:3:1
 Florida, 2015**

Status	Survey Participants ⁴		CHD ²		CHC ³		Private Provider		No Source	
	# ¹	%	# ¹	%	# ¹	%	# ¹	%	# ¹	%
Complete ⁵	1,528	83.59%	94	90.38%	105	86.07%	1,105	85.07%	224	73.93%
Partial	264	14.44%	10	9.62%	17	13.93%	194	14.93%	43	14.19%
No Shots ⁶	36	1.97%	0	0%	0	0%	0	0%	36	11.88%
Statewide	1,828	100%	104	5.69%	122	6.67%	1,299	71.06%	303	16.58%

¹ Children are grouped by status and vaccine provider for the majority of the vaccinations for the measure.

² County Health Department

³ Community Health Center

⁴ Excludes 14 children whose parents refused to participate, 223 children who could not be located, and 5 children deleted from the database.

⁵ 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.

⁶ Includes 4 children with no vaccines for the 4:3:1:3:3:1 measure and 32 children with a religious exemption.

Department of Health
Immunization Levels in 2-Year-Old Children
Historic Data 1996–2015
Florida, 2015

Year	Survey Participants ¹ #	Complete ² %	Partial %	No Shots ³ %	Private Provider ⁴ %	CHD %	CHC %	No Source %	≥4 DTaP %	≥3 Polio %	1 MMR %	3 Hib %	3 Hep B %	1 VZV %	4 PCV %
2015 ⁵	1,828	85.5	12.9	1.6	75.3	4.2	7.1	13.3	89.5	94.8	93.4	94.8	94.3	94.3	84.7
2014 ⁵	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 ⁵	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 ⁵	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 ⁵	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 ⁵	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 ⁶	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 ⁵	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 ⁵	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 ⁵	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 ⁵	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 ⁵	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

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

² Completion of 4:3:1:3:3:1 series at 24 months of age. 1996–2005 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.

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

⁴ Includes military providers.

⁵ Complete and partial percentage weighted by the number of births in each strata.

⁶ 2009 uses the 4:3:1:3:3:1 measure, excluding the Hib vaccinations. Including the Hib vaccinations, the completion percentage was 81.9%.

Department of Health
Immunization Levels in 2-Year-Old Children
Percent Immunized by Specific Vaccine and Provider Type
Florida, 2015

Provider Type	Participants w/Shots ¹		Dose 1	Dose 3	Dose 4	Dose 1	Dose 3	Dose 1	Dose 3	Dose 3	Dose 1	Dose 1	Dose 2	Dose 3	Dose 4
	# ²	%	DTaP	DTaP	DTaP	Polio	Polio	MMR	Hib	Hep B	VZV	PCV ³	PCV ³	PCV ³	PCV ³
CHD ⁴	104	5.80%	125	107	115	128	112	117	105	121	116	125	128	104	94
Private Provider	1,299	72.49%	1,292	1,226	1,116	1,283	1,207	1,167	1,203	1,163	1,177	1,262	1,206	1,191	1,063
CHC ⁵	122	6.81%	113	121	106	114	122	120	113	118	116	113	119	120	101
Unknown	267	14.90%	257	289	274	258	274	294	298	293	298	276	306	304	261
Statewide Total	1,792	100%	1,787	1,743	1,611	1,783	1,715	1,698	1,719	1,695	1,707	1,776	1,759	1,719	1,519

¹ Excludes 14 children whose parents refused to participate, 223 children who could not be located, 5 children deleted from the database, 32 children with a religious exemption, and 4 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 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.

³ Pneumococcal conjugate (PCV) vaccine

⁴ County Health Department

⁵ Community Health Center

Department of Health
**Immunization Status in 2-Year-Old Children
 By High-Risk Characteristics for 4:3:1:3:3:1
 Florida, 2015**

		Mother's Education Level (Years)							
		<12	12		>12		Unknown		
Complete ¹	209	81.96%	496	82.39%	810	84.55%	13	100.00%	
Incomplete ²	46	18.04%	106	17.61%	148	15.45%	0	0.00%	

		Age of Mother								
		<20	20–24		25–29		≥30		Unknown	
Complete ¹	117	79.59%	368	80.17%	450	86.71%	586	84.32%	7	87.50%
Incomplete ²	30	20.41%	91	19.83%	69	13.29%	109	15.68%	1	12.50%

		Number of Siblings in Family							
		≥3	2		1		0		
Complete ¹	159	79.90%	241	82.25%	484	83.02%	644	85.52%	
Incomplete ²	401	20.10%	52	17.75%	99	16.98%	109	14.48%	

		Marital Status			
		No	Yes		
Complete ¹	756	82.44%	772	84.74%	
Incomplete ²	161	17.56%	139	15.26%	

		Trimester of Initiation of Prenatal Care							
		3rd	2nd		1st		Unknown		
Complete ¹	65	82.28%	279	79.94%	1,128	84.94%	56	77.78%	
Incomplete ²	14	17.72%	70	20.06%	200	15.06%	16	22.22%	

¹ 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,

² Includes children with no shots and children with a religious exemption.

Source: Florida Department of Health, Bureau of Vital Statistics

Department of Health
**Immunization Levels in 2-Year-Old Children
 By Racial and Ethnic Groups
 Florida, 2015**

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	832	744	5	0.67% (± 0.6%)	649	87.23% (± 2.4%)	90	12.10% (± 2.3%)	644	86.56% (± 2.5%)	95	12.77% (± 2.4%)
	White	1,233	1,084	31	2.86% (± 1.0%)	879	81.09% (± 2.3%)	174	16.05% (± 2.2%)	867	79.98% (± 2.4%)	186	17.16% (± 2.2%)
	Statewide Total	2,070 ⁷	1,828	36	1.97% (± 0.6%)	1,528	83.59% (± 1.7%)	264	14.44% (± 1.6%)	1,511	82.66% (± 1.7%)	281	15.37% (± 1.7%)

By Ethnicity	Black	374	339	4	1.18% (± 1.1%)	288	84.96% (± 3.8%)	47	13.86% (± 3.7%)	287	84.66% (± 3.8%)	48	14.16% (± 3.7%)
	Hispanic	539	486	4	0.82% (± 0.8%)	415	85.39% (± 3.1%)	67	13.79% (± 3.1%)	410	84.36% (± 3.2%)	72	14.81% (± 3.2%)
	White	977	855	28	3.27% (± 1.2%)	689	80.58% (± 2.7%)	138	16.14% (± 2.5%)	680	79.53% (± 2.7%)	147	17.19% (± 2.5%)
	Other	175	148	0	0.00% (± 0.0%)	136	91.89% (± 4.4%)	12	8.11% (± 4.4%)	134	90.54% (± 4.7%)	14	9.46% (± 4.7%)
	Statewide Total	2,070 ⁷	1,828	36	1.97% (± 0.6%)	1,528	83.59% (± 1.7%)	264	14.44% (± 1.6%)	1,511	82.66% (± 1.7%)	281	15.37% (± 1.7%)

¹ 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.

² 4:3:1:3:3:1:4 = 4:3:1:3:3:1 plus 4 or more doses of pneumococcal conjugate (PCV) vaccine.

³ Includes children with no vaccines for the 4:3:1:3:3:1 measure and 32 children with a religious exemption.

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

⁵ Does not include 14 children whose parents refused to participate, 223 children who could not be located, and 5 children deleted from the database.

⁶ % ± 95% Confidence Level.

⁷ Statewide Sample Size includes 5 children deleted from the database and not included in the Sample Size, Race, or Ethnic Groups.