

Utilization Of Public Health Clinics For Immunization Services

EXECUTIVE SUMMARY

Since 2005 all Los Angeles County (LAC) Public Health Centers (PHCs) have used the regional immunization registry (formerly the Los Angeles-Orange Immunization Network or LINK; currently the California Immunization Registry or CAIR) to keep track of the immunizations they administer. This is the third report in which the Los Angeles County Immunization Program (LACIP) analyzed data from CAIR to characterize the population within each SPA utilizing PHCs for immunization purposes; the second containing comparisons to previous years. Persons included in the analysis for this report were those who received at least one immunization at a PHC in 2009. Except for immunizations administered after December 31, 2009, the entire shot history of these persons was included in the analysis. This analysis allowed LACIP to observe changes in patient profiles (age range, types of vaccines sought, SPA of residence) that may have occurred from 2005 to 2009. This report contains 4-year averages used to compare data from past reports. Additionally, an addendum containing a GIS analysis on PHC utilization is under consideration.

Uses/Purpose of this report

Data from previous reports have been utilized to prevent health center closures. These findings have been shared with CAIR personnel responsible for data quality. Finally, the data in this report is being cited for an article in *Rx for prevention*, an LAC Department of Public Health publication. Other potential uses of these data can be found at the end of this summary.

Overall Trends

Although the overall population profile of persons utilizing Public Health Centers has not changed in comparison to the last 4 years, some increases were observed. The proportion of adults (persons >18 years of age) utilizing Public Health Centers has increased in each SPA. Additionally, persons of all age groups are utilizing Public Health Centers more than in past years to obtain their vaccinations.

Population profile: which PHCs are being utilized most, by what age groups, and for which vaccines?

Table 1 – Denominator data for 2009 used in Table 2 and Figures 1 and 2, by patients' SPA of residence.

- Top and bottom rankings identical to last year:
 - a. SPA 3 residents – first in PHC usage with 12,909 visits and 29,790 shots.
 - b. SPA 8 residents – second in PHC usage with 7,043 visits and 18,184 shots.
 - c. SPA 5 residents – ranked the lowest in PHC usage with 890 visits and 2,060 shots.

Table 2 – Public Health Centers visited by persons obtaining at least one vaccination in 2009, by patients' SPA of residence.

- Persons utilizing PHCs were more inclined to visit the health center(s) closest to them; this was true regardless of age group (data not shown).
 - a. Example: persons living in SPA 3 utilized Monrovia and Pomona Health Centers most of the time.
 - b. Persons in SPA 5, which does not have a PHC assigned to it, utilized Curtis Tucker and Hollywood/Wilshire Health Centers.
- Comparisons to the 4-year average
 - a. There was not much of a shift in the clinics utilized by residents in SPAs 1, 2, 4, 7, and 8.

- b. SPA 3 residents seemed to utilize Monrovia Health Center more than in the past 4 years, increasing the average number of visits by 593.
- c. The largest decreases in utilization occurred in SPAs 5 and 6.
 - i. SPA 5 residents decreased utilization of Curtis Tucker Health Center (409 fewer visits on average).
 - ii. SPA 6 decreased utilization of South Health Center (363 fewer visits on average).
- Other clinics utilized (in addition to those listed in Table 2)
 - a. Antelope Valley Health Center
 - i. SPA 3 residents – 7.6% of their total visits to a PHC
 - b. Central Health Center
 - i. SPA 2 residents – 2.4% of their total visits to a PHC
 - ii. SPA 5 residents – 9.3% of their total visits to a PHC
 - iii. SPA 6 residents – 8.3% of their total visits to a PHC
 - iv. SPA 7 residents – 4.0% of their total visits to a PHC
 - c. Curtis Tucker Health Center
 - i. SPA 4 residents – 2.8% of their total visits to a PHC
 - d. Glendale Health Center
 - i. SPA 4 residents – 7.7% of their total visits to a PHC
 - e. Hollywood/Wilshire Health Center
 - i. SPA 2 residents – 4.2% of their total visits to a PHC
 - ii. SPA 6 residents – 6.3% of their total visits to a PHC
 - f. South Health Center
 - i. SPA 7 residents – 3.2% of their total visits to a PHC
 - ii. SPA 8 residents – 5.0% of their total visits to a PHC
 - g. Torrance Health Center.
 - i. SPA 5 residents – 4.3% of their total visits to a PHC
 - ii. SPA 6 residents – 4.1% of their total visits to a PHC
 - iii. SPA 7 residents – 2.9% of their total visits to a PHC
 - h. Whittier Health Center
 - i. SPA 3 residents – 2.7 % of their total visits to a PHC

Figure 1 – Vaccines received by SPA residents at Public Health Centers .

- Hepatitis A vaccine
 - a. In each SPA, accounted for greater than 11% of the vaccine administered by PHCs.
 - b. Decreased usage observed when compared to the average proportion for the past 4 years.
- Varicella vaccine
 - a. For all 8 SPAs, in the top 5 (usually second or third) for the amount of vaccine administered by PHCs.
 - b. Increased its proportion of all vaccines administered by PHCs as compared to the 4-year average.
- For all SPAs, RotaTeq and Tdap vaccines have also increased in their proportion of vaccine administered.

Figure 2 – Age groups of SPA residents utilizing Public Health Clinics for vaccinations at least once in 2009.

- PHC utilization
 - a. Most by persons aged 2 to 6 years and persons 7 years of age or older, except in SPA 1.
- Persons aged 18 months and under

- a. Made up a considerable proportion of SPA 1, 3, 6, 7 and 8 residents obtaining vaccines from PHCs.
- Adults (persons over the age of 18 years)
 - a. Made up over 16% of the population utilizing PHCs, except in SPA 1.
- Comparisons to the 4-year average
 - a. Persons aged 2 to 6 years and persons 7 to 18 years of age experienced a drop in the proportion of the population utilizing PHCs.
 - b. There was an increase in the percentage of residents from each SPA being over 18 years of age.

Frequency of PHC use for vaccinations

Table 3 – The proportion of total shots and total vaccine-related visits for persons who utilized a Public Health Center for at least one vaccination in 2009, by patients’ SPA of residence and age.

To determine how frequently LAC residents utilized PHCs for immunization purposes we calculated the proportion of shots they received at a PHC (compared to all their immunizations) and the proportion of vaccination-related visits for which a PHC was utilized.

- Children 6 months or younger
 - a. The proportion of immunization-related visits taking place at PHCs was less than 10% (most SPAs)
 - b. SPA 1: utilized PHCs for more than 17% of their immunization-related visits
 - c. SPAs 3 and 6: utilized PHCs for nearly 11% of their immunization-related visits.
- Children less than 2 years of age
 - a. The proportion of shots obtained from PHCs by ranged from 7% (newborns 6 months or younger in SPA 5) to 49% (19-23 month olds in SPA 1).
- Children aged 2 to 6 years
 - a. The proportion of shots obtained from PHCs ranged from 24% in SPA 2 to 52% in SPA 1.
- Persons greater than 7 years of age
 - a. Utilized PHCs for the majority of their shots and their vaccination-related visits (all SPAs).
- Comparisons to the 4-year average
 - a. There were differences between the current proportions but the overall distribution of age groups did not change for any SPA.

Adolescents and Adults utilizing PHCs

Table 4 – Vaccines received at Public Health Centers by adolescents and adults who utilized a Public Health Center for at least one vaccination in 2009, by antigen and age.

- Adolescents (persons age 7-18 years of age)
 - a. Primary vaccines administered by PHCs: hepatitis A, hepatitis B, HPV, Meningococcal polysaccharide, Tdap, and varicella.
 - b. Comparisons to the 4-year average
 - i. Increased proportions of influenza, HPV, Meningococcal polysaccharide, Tdap, and varicella vaccines.
 - ii. Decreased proportions of hepatitis A and B vaccines.
 - iii. The large decrease in the proportion of administered vaccine that consisted of Td vaccine was largely due to the increased use of Tdap.

- Adults (persons older than 18 years of age)
 - a. Primary vaccines administered were the hepatitis A, hepatitis B, MMR, and Tdap vaccines.
 - b. Comparisons to the 4-year average
 - i. Increased proportions of influenza, hepatitis B, MMR, and Tdap vaccines
 - ii. Decreased proportion of hepatitis A vaccine
 - iii. The large decrease in the proportion of administered vaccine that consisted of Td vaccine was largely due to the increased use of Tdap.

Invalid doses

Table 5 – Invalid doses administered by Public Health Centers to persons who visited a Public Health Center for a vaccination at least once in 2009, by SPA of health center.

- 1,786 invalid doses administered by PHCs.
- When analyzed by SPA, and taken as a percentage of all vaccines administered, the invalid doses were minimal.
- Comparisons to the 4-year average
 - a. SPA 6 experienced an increase in the percentage of all vaccines administered that were invalid doses.
 - b. SPA 4 experienced a decrease in the percentage of all vaccines administered that were invalid doses.

Table 6 – Vaccines and antigens for which invalid doses were administered by Public Health Centers to persons who visited a Public Health Center for at least one vaccination in 2010, by SPA of health center.

- Pediarix
 - a. The cause of many of the invalid doses in all SPAS.
 - b. Hepatitis B antigen was probably the cause of the invalid dose.
 - c. A fair proportion of the DTP and Polio antigens were also considered invalid.
 - d. Possible data entry errors.
 - i. Entering the administration of Pediarix AND indicating that DTP, hepatitis B, and polio were given.
 - o Double counts the antigen, forcing CAIR to count one of the antigen doses as invalid.
- Confusion due complicated interval recommendations
 - a. HIB
 - i. Interval length depends on the patient’s age when s/he received the previous dose
 - ii. Total number of doses depends on the patient’s age when the series was started.

Next steps with these data

Immunization Program

Epidemiology Unit

- Perform more in-depth analysis of the data to determine whether which doses were invalid, if the invalid doses were avoidable, a consequence of using combination vaccines, or data entry errors.
- Perform an analysis of CAIR data for Personal Health Centers.

CAIR

- Research the feasibility and practicality of modifying the CAIR database to warn the user of potential data entry errors such as entering invalid doses.
- Discuss the feasibility of identifying the reasons for truly invalid doses (i.e., invalid doses that are not the result of data entry errors).

AEP Unit

- By identifying which age groups utilize Public Health Centers as their primary provider for vaccinations other services targeting those age groups can be added or better outreach for other age groups can be developed.
- The report can be shared with ICLAC members to make them aware of the patients seeking care at PHCs. The ICLAC members would also be made aware of which vaccines are commonly involved when invalid doses are administered to patients.

Nursing

- The information on invalid doses can be used to guide QARs with health centers.

Community Health Services

- By identifying which age groups utilize Public Health Centers as their primary provider for vaccinations other services targeting those age groups can be added or better outreach for other age groups can be developed.

Table 1. Denominator data for 2009 used in Table 2 and Figures 1 and 2, by patients' SPA of residence.

SPA	Total number of visits to Public Health Centers ¹ (for Table 1 and Figure 2)		Total number of shots given at Public Health Centers ² (for Figure 1)	
	n	(%)	n	(%)
1	4,771	(10)	15,004	(13)
2	6,331	(14)	16,206	(14)
3	12,909	(28)	29,790	(26)
4	4,683	(10)	10,252	(9)
5	890	(2)	2,060	(2)
6	5,162	(11)	13,458	(12)
7	4,254	(9)	10,771	(9)
8	7,043	(15)	18,184	(16)
Total	46,043	(100)	115,725	(100)

¹Total number of visits for all persons who visited a Public Health Center **at least once** in 2009 for a vaccination. Total visits include those occurring prior to 2009.

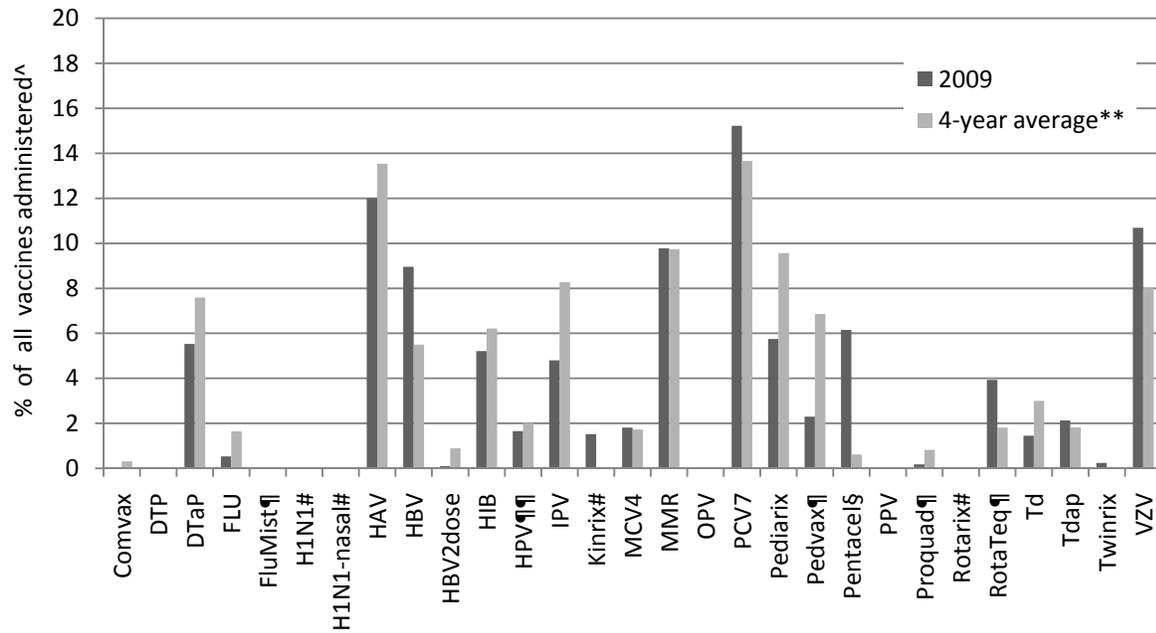
²Total number of shots for all persons who obtained **at least one** vaccination at a Public Health Center in 2009. Total shots include those administered prior to 2009.

Table 2. Public Health Centers visited by persons obtaining at least one vaccination in 2009, by patients' SPA of residence.¹

SPA	Public Health Center(s) visited most frequently	% of all visits	4-year average (2005-2008)	Difference between 2009 and 4-year average	Average number of decrease (-) or increase (+) in visits
1	Antelope Valley	96.5	97.8	-1.3%	-75
2	Glendale	51.1	55.7	-4.6%	-265
	Pacoima	38.6	35.8	+2.8%	+161
3	Monrovia	51.3	41.0	+10.3%	+593
	Pomona	35.7	40.0	-4.3%	-247
4	Central	34.1	33.1	+1.0%	+58
	Hollywood-Wilshire	50.3	51.6	-1.3%	-75
5	Curtis Tucker	34.5	41.6	-7.1%	-409
	Hollywood-Wilshire	46.9	45.2	+1.7%	+98
6	Curtis Tucker	23.9	22.3	+1.6%	+92
	South	54.7	61.0	-6.3%	-363
7	Whittier	84.5	88.5	-4.0%	-230
8	Curtis Tucker	42.7	41.9	+0.8%	-46
	Torrance	48.5	50.9	-2.4%	-138

¹Visits to Public Health Clinics include those occurring prior to 2009.

Figure 1a. Vaccines received by SPA 1 residents* at Public Health Centers .



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

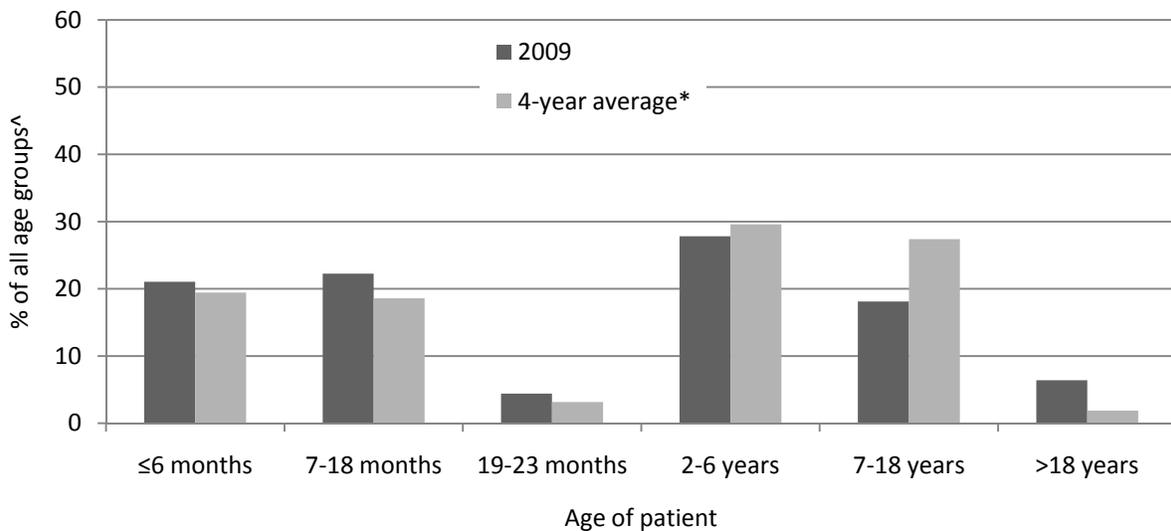
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 1 residents at Public Health Centers (n=15,004).

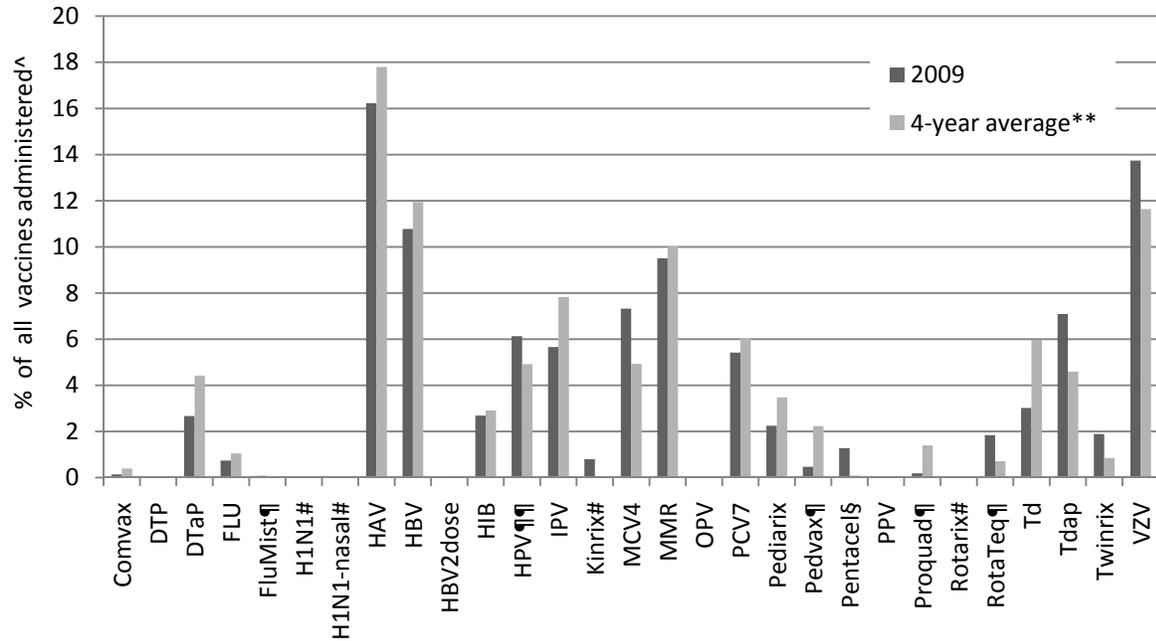
Figure 2a. Age groups of SPA 1 residents utilizing Public Health Clinics for vaccinations at least once in 2009.



*4-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 1 residents who made at least one vaccination-related visit to a Public Health Center in 2009 (n=4,771).

Figure 1b. Vaccines received by SPA 2 residents* at Public Health Centers .



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

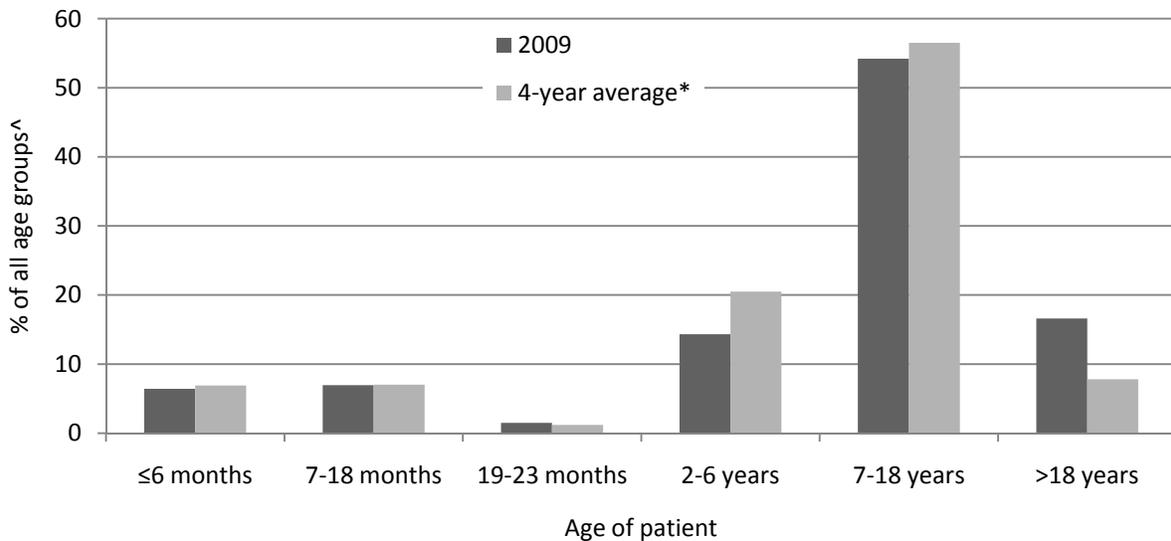
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 2 residents at Public Health Centers (n=16,206).

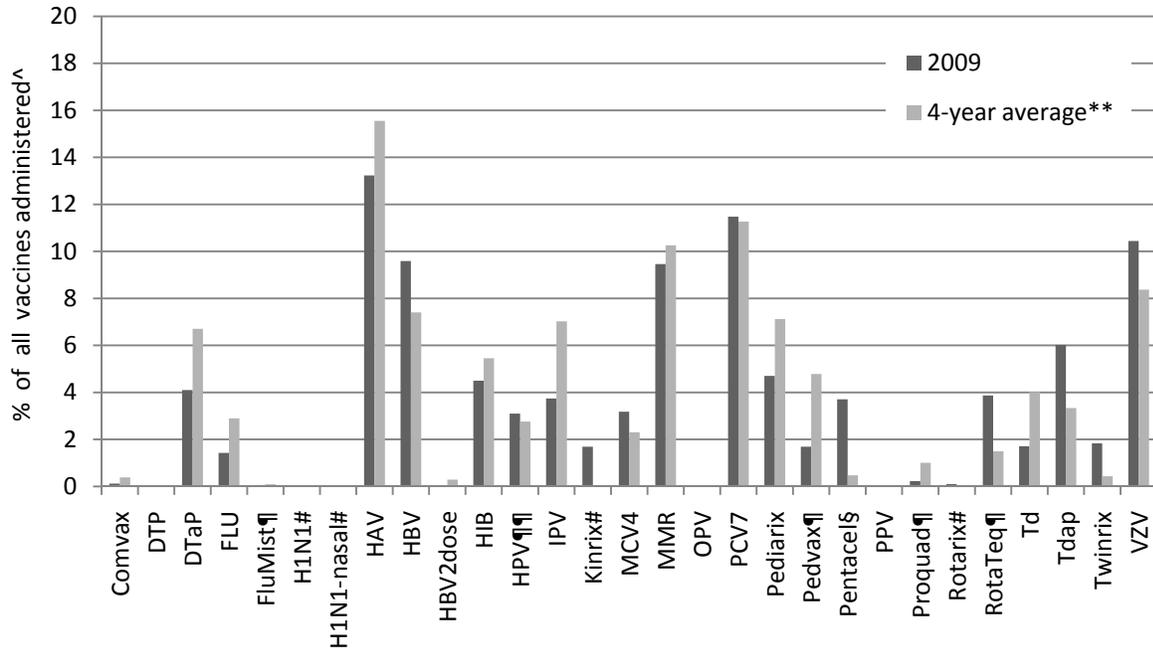
Figure 2b. Age groups of SPA 2 residents utilizing Public Health Clinics for vaccinations at least once in 2009.



*4-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 2 residents who made at least one vaccination-related visit to a Public Health Center in 2008 (n=6,331).

Figure 1c. Vaccines received by SPA 3 residents* at Public Health Centers .



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

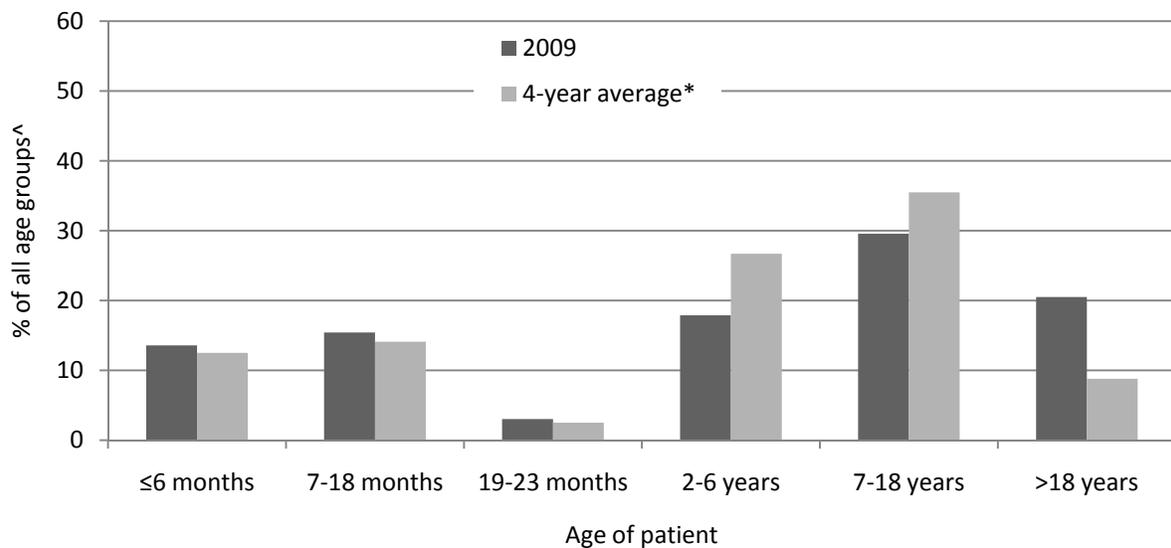
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 3 residents at Public Health Centers (n=29,790).

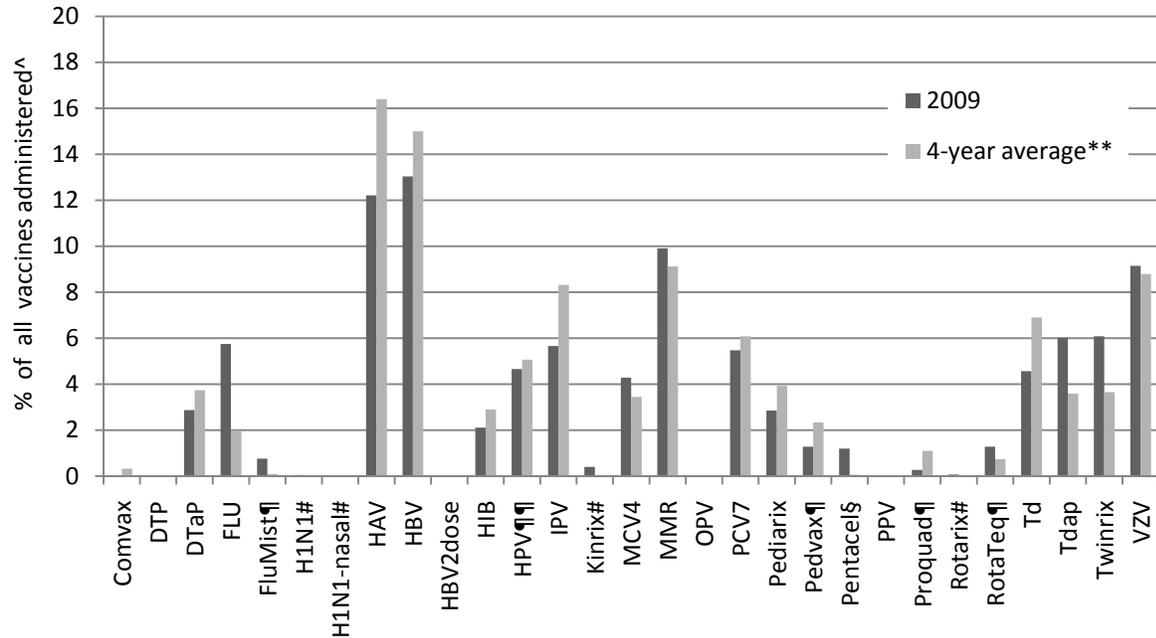
Figure 2c. Age groups of SPA 3 residents utilizing Public Health Clinics for vaccinations at least once in 2009.



*3-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 3 residents who made at least one vaccination-related visit to a Public Health Center in 2009 (n=12,909).

Figure 1d. Vaccines received by SPA 4 residents* at Public Health Centers.



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

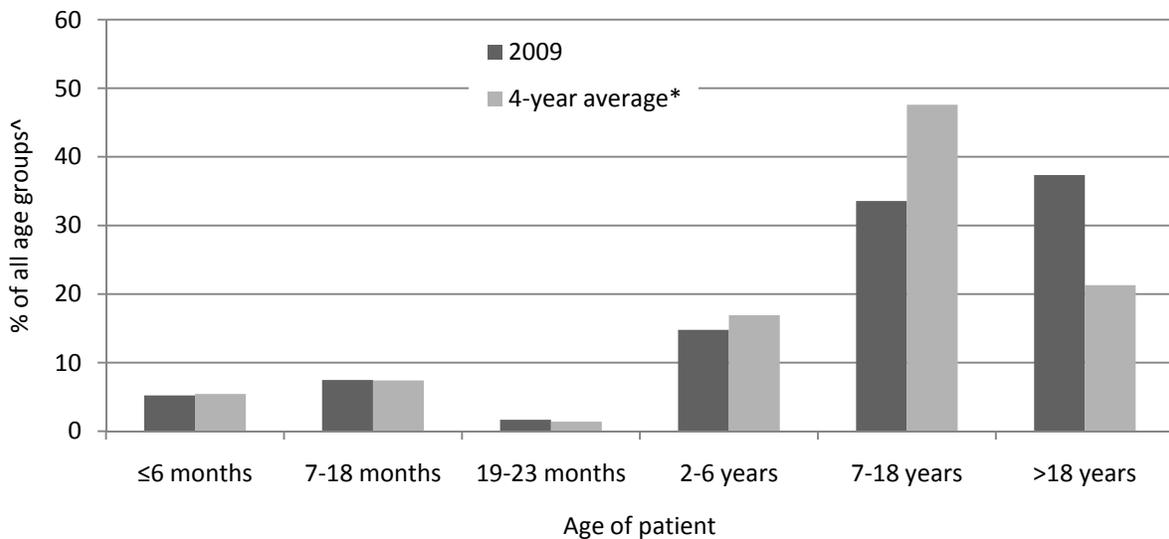
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 4 residents at Public Health Centers (n=10,252).

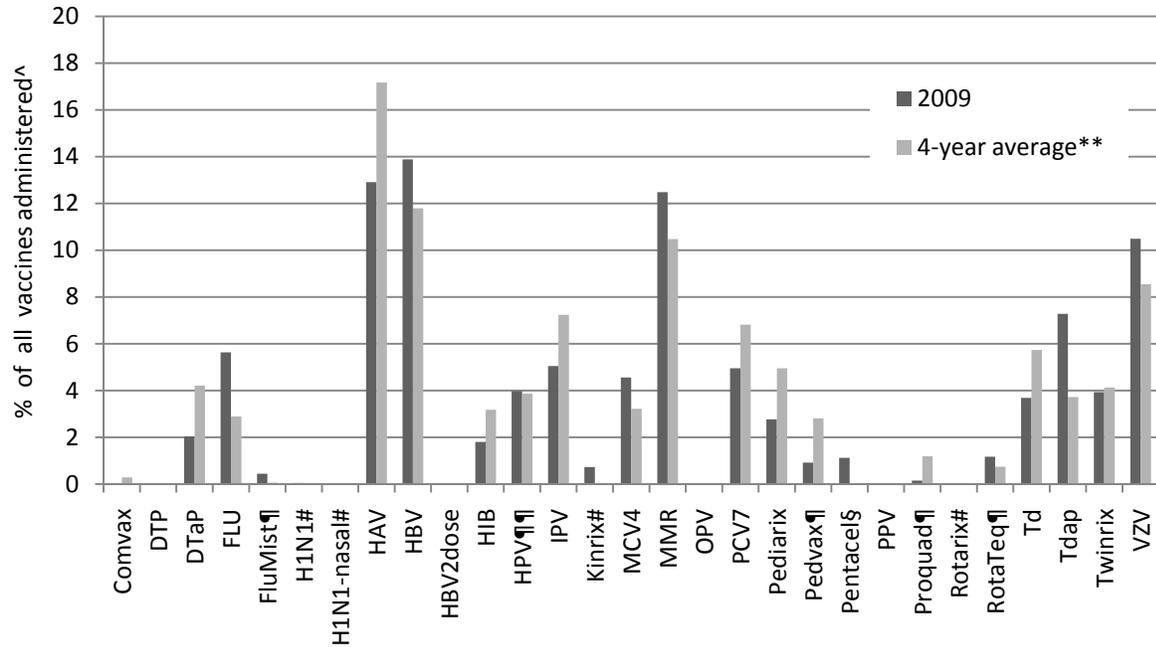
Figure 2d. Age groups of SPA 4 residents utilizing Public Health Clinics for vaccinations at least once in 2009.



*3-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 4 residents who made at least one vaccination-related visit to a Public Health Center in 2009 (n=4,683).

Figure 1e. Vaccines received by SPA 5 residents* at Public Health Centers.



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

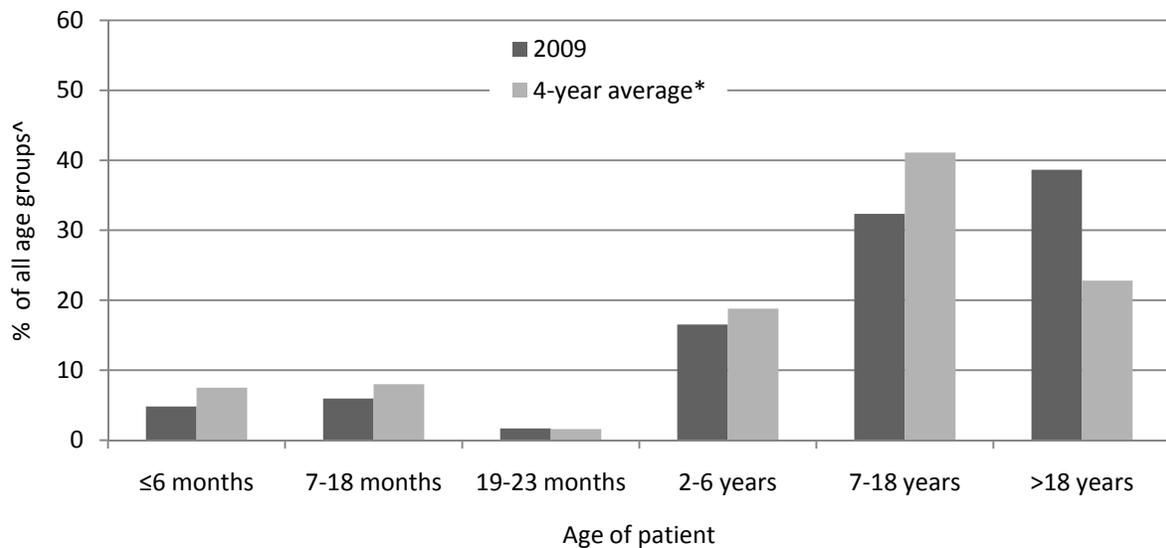
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 5 residents at Public Health Centers (n=2,060).

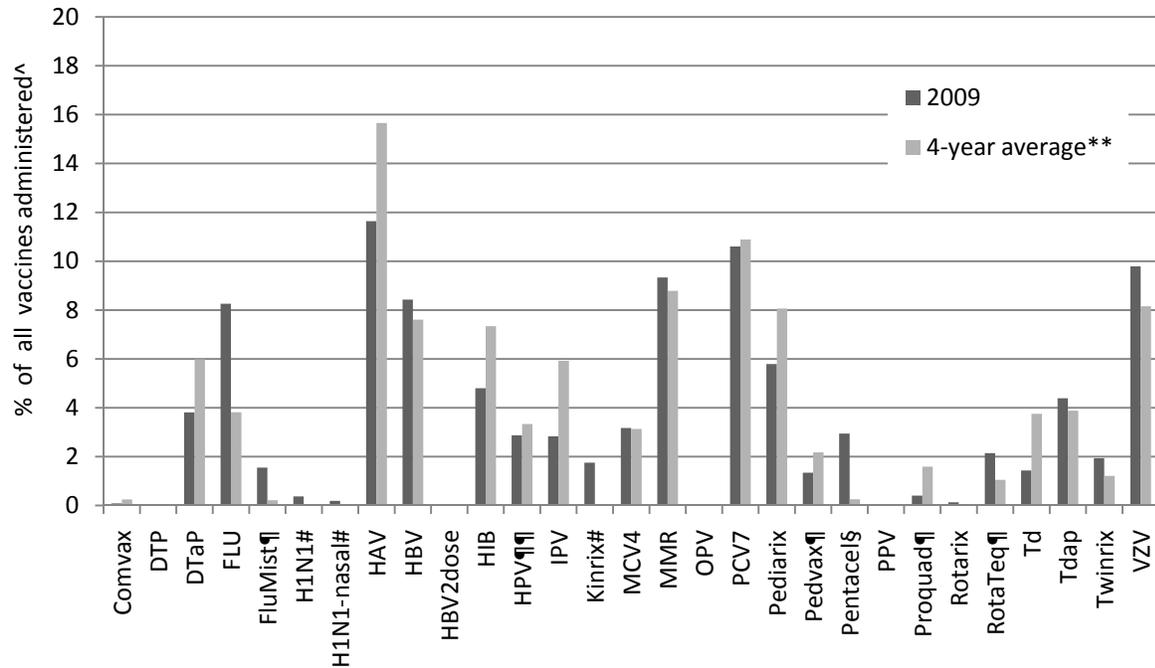
Figure 2e. Age groups of SPA 5 residents utilizing Public Health Clinics for vaccinations at least once in 2008.



*4-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 5 residents who made at least one vaccination-related visit to a Public Health Center in 2009 (n=890).

Figure 1f. Vaccines received by SPA 6 residents* at Public Health Centers.



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

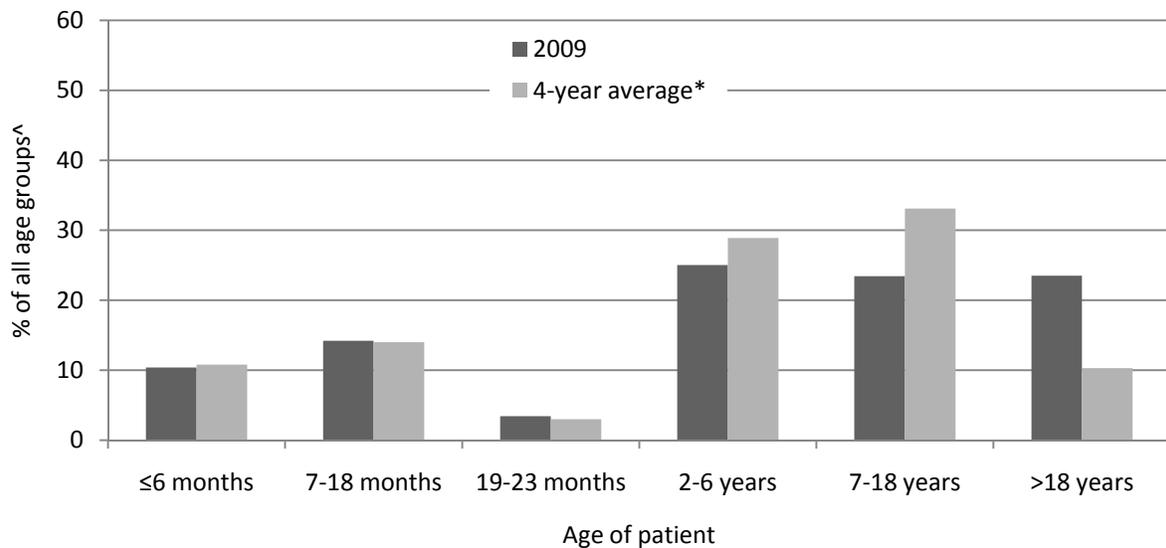
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 6 residents at Public Health Centers (n=13,458).

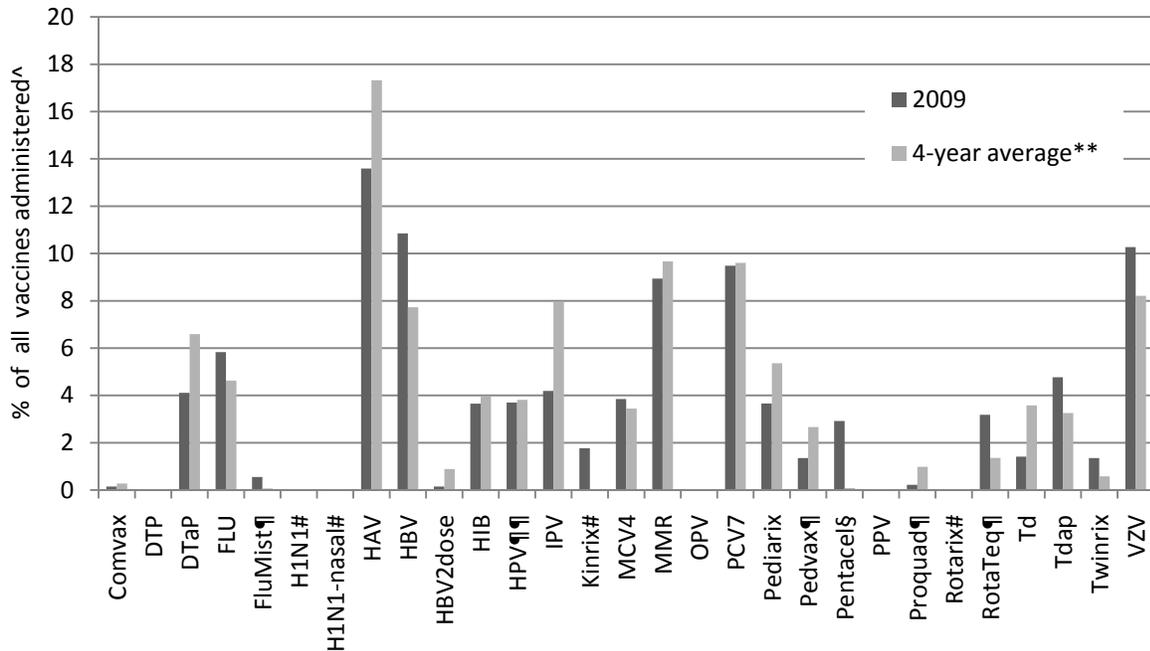
Figure 2f. Age groups of SPA 6 residents utilizing Public Health Clinics for vaccinations at least once in 2008.



*4-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 6 residents who made at least one vaccination-related visit to a Public Health Center in 2009 (n=5,162).

Figure 1g. Vaccines received by SPA 7 residents* at Public Health Centers.



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

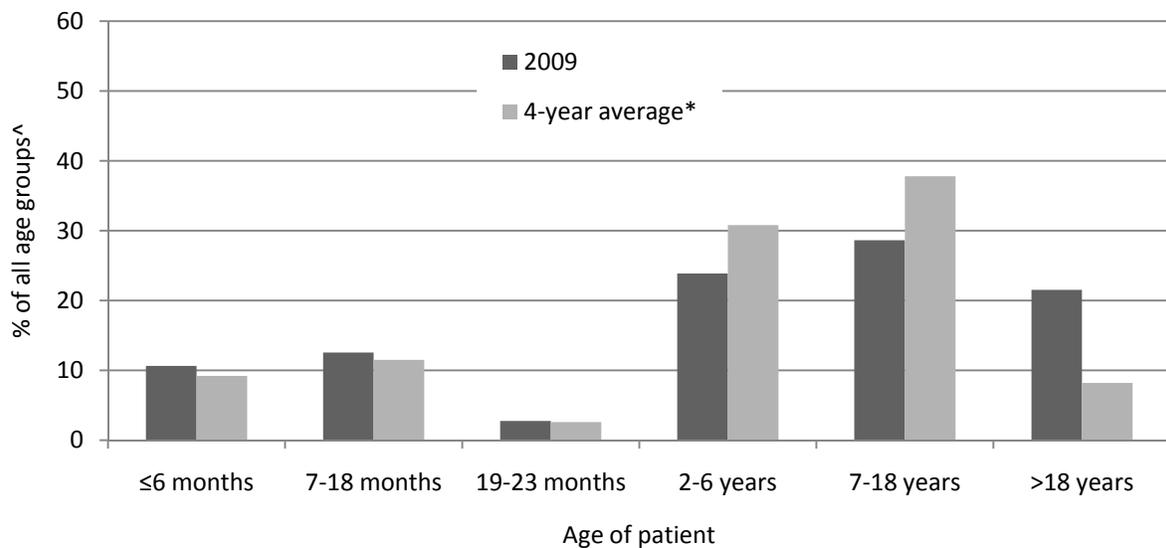
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 7 residents at Public Health Centers (n=10,771).

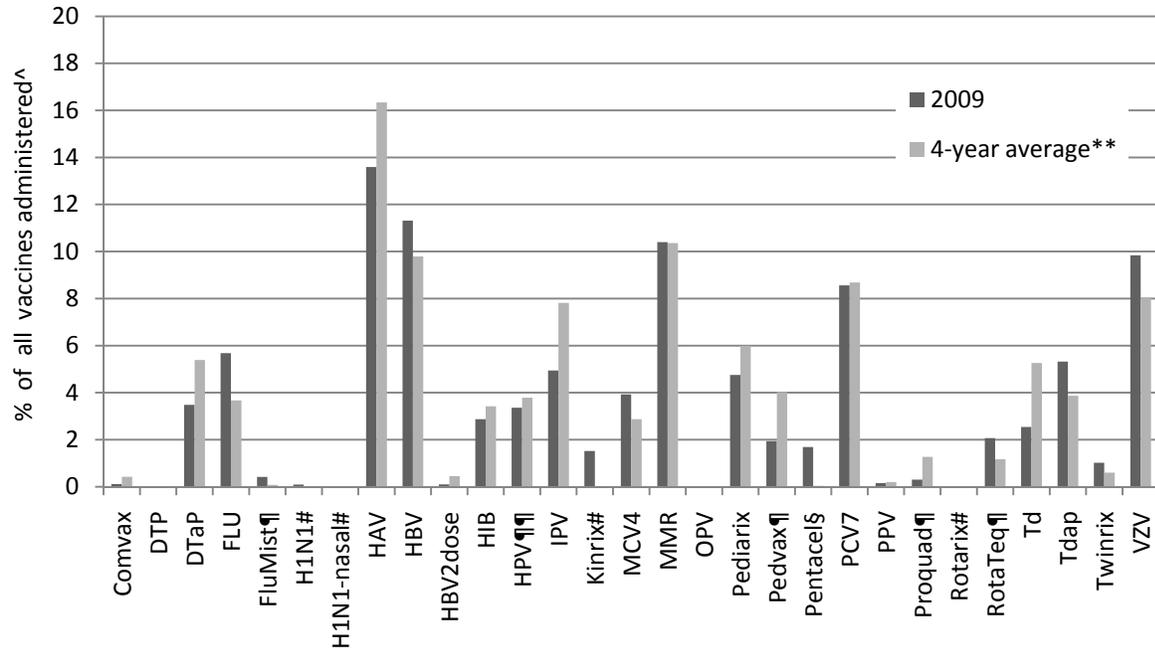
Figure 2g. Age groups of SPA 7 residents utilizing Public Health Clinics for vaccinations at least once in 2009.



*4-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 7 residents who made at least one vaccination-related visit to a Public Health Center in 2009 (n=4,254).

Figure 1h. Vaccines received by SPA 8 residents* at Public Health Centers.



*Persons included received at least one vaccine from a Public Health Center in 2009.

**4-year average (2005-2008).

¶ The 3-year average (2006-2008) is reported.

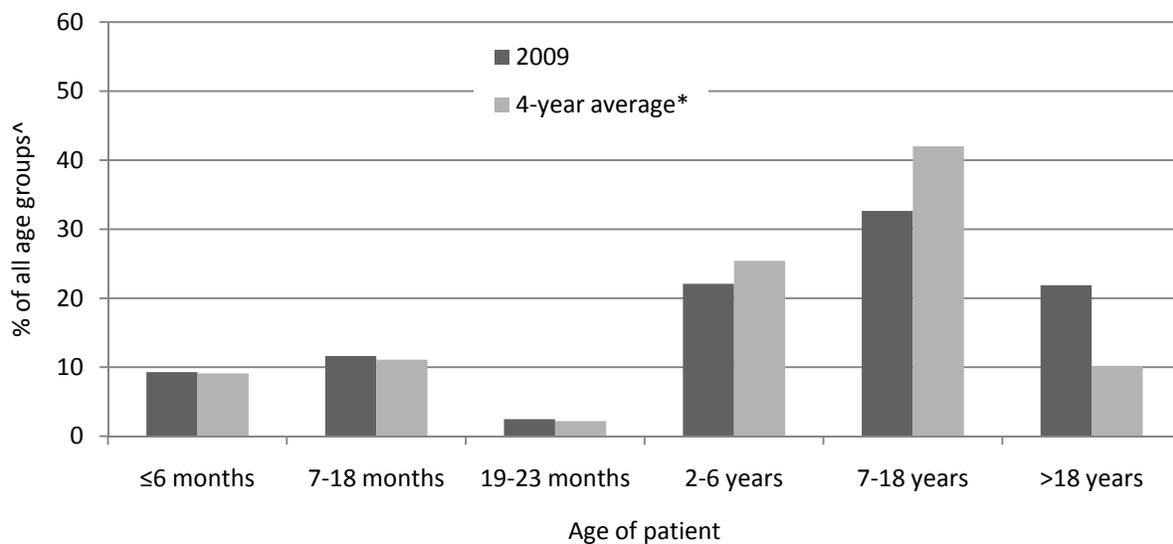
¶¶ The 2-year average (2007-2008) is reported.

§2008 percentage.

There is no average for previous years because the vaccine was not administered in 2008 or earlier.

^The denominator is the total number of shots given to SPA 8 residents at Public Health Centers (n=18,184).

Figure 2h. Age groups of SPA 8 residents utilizing Public Health Clinics for vaccinations at least once in 2009.



*4-year average (2005-2008).

^The denominator is the total number of visits to Public Health Centers by SPA 8 residents who made at least one vaccination-related visit to a Public Health Center in 2009 (n=7,043).

Table 3. The proportion of total shots and total vaccine-related visits for persons who utilized a Public Health Center for at least one vaccination in 2009, by patients' SPA of residence and age.

SPA of residence	# at Public Health	SHOTS			# at Public Health	VISITS		
		Total #	% ¹	4-year average (2005-2008)		Total #	% ²	4-year average (2005-2008)
All SPAs								
≤6 months	17,198	136,351	12.6	10.2	5,094	53,760	9.5	8.0
7-18 months	19,629	80,180	24.5	19.6	5,983	35,542	16.8	13.3
19-23 months	3,442	11,454	30.1	23.1	1,260	5,749	21.9	16.4
2-6 years	24,117	68,852	35.0	34.1	9,242	35,081	26.3	25.4
7-18 years	37,901	61,326	61.8	61.1	14,698	27,335	53.8	53.3
>18 years	13,438	15,973	84.1	77.2	9,766	11,767	83.0	72.7
1								
≤6 months	3,453	16,250	21.2	18.5	1,004	5,761	17.4	15.5
7-18 months	3,829	10,717	35.7	29.0	1,062	3,829	27.7	21.9
19-23 months	704	1,431	49.2	35.7	210	556	37.8	26.3
2-6 years	4,158	7,952	52.3	45.6	1,325	3,365	39.4	33.9
7-18 years	2,401	3,626	66.2	69.8	864	1,554	55.6	60.3
>18 years	459	576	79.7	83.3	306	393	77.9	85.0
2								
≤6 months	1,421	19,979	7.1	6.5	407	8,788	4.6	4.7
7-18 months	1,367	11,239	12.2	11.1	440	6,180	7.1	6.6
19-23 months	242	1,504	16.1	11.5	95	924	10.3	7.3
2-6 years	2,400	10,083	23.8	27.0	907	5,802	15.6	18.0
7-18 years	9,416	14,292	65.9	67.8	3,432	6,216	55.2	56.7
>18 years	1,360	1,776	76.6	81.0	1,050	1,369	76.7	81.1

¹ Percent of all shots that were obtained at a Public Health Center.

² Percent of all vaccine-related visits that were to Public Health Centers.

Table 3. The proportion of total shots and total vaccine-related visits for persons who utilized a Public Health Center for at least one vaccination in 2009, by patients' SPA of residence and age.

SPA of residence	# at Public Health	SHOTS			# at Public Health	VISITS		
		Total #	% ¹	4-year average (2005-2008)		Total #	% ²	4-year average (2005-2008)
3								
≤6 months	5,763	40,599	14.2	10.8	1,753	16,726	10.5	8.5
7-18 months	5,965	22,311	26.7	24.1	1,992	10,367	19.2	16.7
19-23 months	905	3,233	28.0	20.2	392	1,777	22.1	17.6
2-6 years	5,555	17,117	32.5	36.9	2,308	9,381	24.6	27.9
7-18 years	8,116	14,692	55.2	58.3	3,816	7,417	51.4	53.1
>18 years	3,486	4,012	86.9	83.6	2,648	3,068	86.3	83.8
4								
≤6 months	786	9,253	8.5	7.7	244	3,865	6.3	5.5
7-18 months	1,072	5,261	20.4	16.9	350	2,574	13.6	11.1
19-23 months	170	773	22.0	17.8	78	433	18.0	12.9
2-6 years	1,616	5,226	30.9	28.0	692	2,773	25.0	21.3
7-18 years	4,121	7,206	57.2	53.5	1,571	2,996	52.4	50.6
>18 years	2,487	2,960	84.0	70.6	1,748	2,132	82.0	69.8
5								
≤6 months	138	2,040	6.8	8.9	43	890	4.8	6.5
7-18 months	167	1,133	14.7	14.2	53	592	9.0	9.8
19-23 months	38	164	23.2	17.9	15	91	16.5	12.5
2-6 years	370	1,109	33.4	29.8	147	598	24.6	22.4
7-18 years	845	1,288	65.6	63.6	288	535	53.8	53.3
>18 years	502	634	79.2	73.8	344	447	77.0	75.2

¹ Percent of shots that were obtained at a Public Health Center.

² Percent of vaccine-related visits that were to Public Health Centers.

Table 3. The proportion of total shots and total vaccine-related visits for persons who utilized a Public Health Center for at least one vaccination in 2009, by patients' SPA of residence and age.

SPA of residence	# at Public Health	SHOTS			# at Public Health	VISITS		
		Total #	% ¹	4-year average (2005-2008)		Total #	% ²	4-year average (2005-2008)
6								
≤6 months	1,840	14,360	12.8	10.6	537	5,121	10.5	9.0
7-18 months	2,694	10,085	26.7	24.2	733	3,693	19.8	14.5
19-23 months	578	1,547	37.4	26.1	177	631	28.1	20.1
2-6 years	3,429	9,356	36.7	31.5	1,292	4,260	30.3	25.2
7-18 years	3,213	5,413	59.4	57.0	1,210	2,452	49.3	47.4
>18 years	1,704	1,995	85.4	78.5	1,213	1,453	83.5	75.5
7								
≤6 months	1,600	15,334	10.4	7.4	452	5,475	8.3	6.0
7-18 months	1,818	8,435	21.6	16.4	534	3,484	15.3	9.6
19-23 months	311	1,123	27.7	23.2	118	536	22.0	17.1
2-6 years	2,611	7,586	34.4	34.9	1,016	3,732	27.2	23.6
7-18 years	3,193	5,061	63.1	62.4	1,218	2,284	53.3	53.0
>18 years	1,238	1,422	87.1	72.3	916	1,070	85.6	70.4
8								
≤6 months	2,197	18,536	11.9	8.7	654	7,134	9.2	6.9
7-18 months	2,717	10,999	24.7	18.3	819	4,823	17.0	12.3
19-23 months	494	1,679	29.4	21.4	175	801	21.8	15.5
2-6 years	3,978	10,423	38.2	33.1	1,555	5,170	30.1	25.3
7-18 years	6,596	9,748	67.7	62.6	2,299	3,881	59.2	53.5
>18 years	2,202	2,598	84.8	80.7	1,541	1,835	84.0	79.5

¹ Percent of shots that were obtained at a Public Health Center.

² Percent of vaccine-related visits that were to Public Health Centers.

Table 4. Vaccines received at Public Health Centers by adolescents and adults who utilized a Public Health Center for at least one vaccination in 2009, by antigen and age.

Vaccine/ Antigen(s)	Age (years)					
	# of doses	7-18		>18		
		(%) ¹	4-year average (2005-2008)	# of doses	(%)	4-year average (2005-2008)
DTP/DTaP	25	0.1	0.1	0	0.0	0.0
Influenza	1,260	3.3	1.4	675	4.3	0.7
H1N1	40	0.1	-- ²	28	0.2	-- ²
HAV	6,293	16.5	20.6	3,543	22.6	27.1
HBV	4,319	11.3	16.9	6,349	40.6	38.0
HPV ³	4,047	10.6	9.2	89	0.6	0.9
Meningococcus	4,414	11.6	7.8	96	0.6	0.7
MMR	2,928	7.7	9.8	1,871	12.0	9.3
Polio	3,076	8.1	9.2	32	0.2	0.1
PPV	1	0.0	0.0	31	0.2	0.9
Td	1,953	5.1	9.7	618	3.9	14.5
Tdap	3,891	10.2	7.7	2,228	14.2	7.0
VZV	5,862	15.4	12.2	89	0.6	1.1
Other vaccines	0	0.0	0.0	0	0.0	0.1
Total	38,109	100.0		15,649	100.0	

¹ Percent of all vaccines received by adolescents and adults at a Public Health Center.

² The H1N1 vaccine was only available in 2009.

³ Because the HPV vaccine was not available until 2007, the number in the '4-year average' column reflects the 2-year average (for 2007-2008).

Table 5. Invalid doses administered by Public Health Centers to persons who visited a Public Health Center for a vaccination at least once in 2009, by SPA of health center.

SPA	# of invalid doses	% of total doses administered by Public Health Centers	% of total doses administered by Public Health Centers, 4-year average (2005-2008)
1	377	2	2
2	109	1	1
3	311	1	1
4	188	1	2
6	162	2	1
7	117	1	1
8	522	2	2
Total	1,786	1	1

Table 6. Vaccines and antigens for which invalid doses were administered by Public Health Centers to persons who visited a Public Health Center for at least one vaccination in 2010, by SPA of health center.

SPA	Specific vaccines given	% ¹	4-year average (2005-2008)	Antigen(s)	% ²	4-year average (2005-2008)
1	Hepatitis A	10.5	11.7	DTP	18.1	17.6
	IPV	8.4	9.8	Hepatitis A	10.5	11.7
	Pediarix ^{3,4}	21.0	23.4	Hepatitis B	17.3	19.0
	PedvaxHIB	15.4	14.3 ⁵	Hib	18.3	16.1
				Polio	11.8	13.7
2	Hepatitis A	11.7	13.7	DTP	28.6	20.1
	IPV	13.3	14.4	Hepatitis A	11.7	17.2
	Pediarix	13.8	16.9	Hepatitis B	16.8	17.5
	Td	14.3	8.3	Polio	15.8	17.7
3	Hepatitis A	5.8	12.1	DTP	12.8	9.7
	IPV	11.3	17.7	Hepatitis B	42.3	35.7
	Pediarix	32.5	29.6	Polio	11.6	18.0
	PedvaxHIB	7.0	7.0 ⁵			
4	Hepatitis A	29.1	18.4	DTP	23.3	20.2
	Hepatitis B	3.7	11.6	Hepatitis A	37.2	28.2
	IPV	7.6	9.3	Hepatitis B	10.7	16.9
	Pediarix	11.3	17.9	Polio	9.4	12.8
	Td	13.9	8.0			
6	DTaP	10.3	6.7	Hepatitis A	15.8	16.6
	Hepatitis A	13.6	13.8	Hepatitis B	20.7	29.2
	Hib	10.9	10.9	Polio	13.6	11.7
	IPV	12.0	7.5			
	Pediarix	19.0	30.1			
7	Hepatitis B	5.8	25.9	DTP	25.6	25.9
	Pediarix	31.4	6.6	Hepatitis B	26.9	24.3
				Polio	12.2	12.8
8	IPV	11.0	12.5	DTP	15.8	13.2
	Pediarix	26.2	27.8	Hepatitis B	28.0	29.8
			Hib	11.7	13.0	
			Polio	14.0	15.6	
Total	Hepatitis A	11.9	13.2	DTP	19.1	15.8
	IPV	9.8	11.9	Hepatitis A	13.7	14.4
	Pediarix	21.9	24.4	Hepatitis B	22.5	23.0
				Hib	11.9	11.2
				Polio	12.3	14.8

¹ Percent of all vaccines administered by Public Health with an invalid dose recorded in CAIR.

² Percent of all antigens administered by Public Health with an invalid dose recorded in CAIR.

³ Pediarix protects against diphtheria, tetanus, pertussis, hepatitis B, and polio.

⁴ Items in bold are found in all SPAs.

⁵ Indicates 3-year average; no PedvaxHIB was administered at Public Health Clinics in 2005. Pedvax protects against haemophilus influenzae type b.