



**County of Los Angeles Department of Public Health
Immunization Program
2009 Annual School Immunization Assessment
Preschool and Kindergarten
December 2010**

Personal Belief Exemption Supplement

Background

State mandated immunization requirements for licensed childcare/preschool entrance play an important role in keeping children up-to-date with their immunization series¹. California school immunization laws require that enrollees entering kindergarten and preschool receive a series of immunizations before admission to any licensed public or private school or preschool (Table 1).

There are several exemptions from immunization requirements allowed under the California Health and Safety Code, one of which is a personal belief exemption (PBE). Under this exemption, parents who feel that immunizations are against their personal beliefs may sign an affidavit at the time of school enrollment to exempt their child from immunization requirements. Children who are not fully vaccinated due to personal belief exemptions or other allowable exemptions are not fully protected against vaccine-preventable diseases and thus, for their protection, may be excluded from school if there is a disease outbreak.

Every Fall, all licensed childcare facilities and public and private schools are required to report the immunization status and the number of medical exemptions and personal belief exemptions for their preschool and kindergarten enrollees, in aggregate, to the Los Angeles County Department of Public Health Immunization Program (LACIP). In 2008, the State Immunization Branch began publishing PBE data at the individual school level.

Objective

The objective of the annual immunization assessment is to monitor licensed preschools and public and private schools compliance with the school immunization laws and assess immunization coverage levels of kindergarteners and preschoolers. The annual assessment also provides an opportunity to assess the level of personal belief exemptions in Los Angeles County and in individual Service Planning Areas (SPAs).

Methods

Population

Eligibility

- Enrollees attending public or private schools at preschool and kindergarten grade levels.
 - Preschool enrollees within the age range of 24-59 months²
 - Kindergarten enrollees' of all ages
 - For ungraded classes, only enrollees within the age range of 57-69 months³
- Data were not available for preschool children attending family home day cares, day nurseries, nursery schools and development centers.

¹ Health and Safety Code, Division 105, Part 2, Chapter 1, Sections 20325-120380; California Code of Regulations, Title 17, Division 1, Chapter 4, Subchapter 8, Sections 6000-6075

² State of California-Health and Human Services Agency (CDPH 8018A-Annual Immunization Report on Children Enrolled in Child Care Centers)

³ State of California-Health and Human Services Agency (PM 236-Immunization Assessment of Kindergarten Students Annual Report)

Data Collection Methods

Each September, the Los Angeles County Immunization Program and the California State Immunization Program coordinate data collection of preschool and kindergarten immunization status. Traditionally, school staff receives standardized immunization assessment forms and returns the completed assessments for each grade-level to LACIP. Preschool data are analyzed by LACIP and kindergarten data are forwarded to the State Immunization Program for analysis.

Note #1: Figure 1 includes all kindergartens. For all other figures and tables, schools with enrollment of less than 10 students were excluded from analysis.

Note #2: In order to be comparable to State results, the 10 student exclusion level and 10% cutoff level for PBE, which was based on the analysis developed by the State PBE population study, was used.¹

Note #3: Because of rounding estimation, the proportions indicated in this report may not yield the exact number of corresponding counts as cited in this report.

Results

The 2009 Personal Belief Exemption Supplement results are grouped into eleven categories:

- I. Immunization Requirements for School Entry
- II. Key Findings and Key Implications
- III. Personal Belief Exemptions in Los Angeles County for ALL Schools
- IV. Personal Belief Exemptions in Los Angeles County for Schools with 10 or More Enrollees
- V. Personal Belief Exemptions: Private Schools
- VI. Personal Belief Exemptions: Public Schools
- VII. Personal Belief Exemptions: Preschool by Zip Code
- VIII. Personal Belief Exemptions: Preschool by City
- IX. Personal Belief Exemptions: Kindergarten by Zip Code
- X. Personal Belief Exemptions: Kindergarten by City
- XI. Personal Belief Exemptions by City/Community (maps)

I. Immunization Requirements for School Entry

Table 1. Immunization requirements for school entry, California 2009

Grade Level	Vaccine					
	Polio	DTaP/DTP	MMR	Hep B	HiB	Varicella ¹
Preschool ²	3	4	1 ³	3	1 ³	1
Kindergarten ²	4 ⁴	5 ⁵	2 ⁶	3	-	1

¹Physician-documented Varicella (chickenpox) disease history or immunity meets the Varicella requirement.

²Health and Safety Code, Division 105, Part 2, Chapter 1, Sections 120325-120380; California Code of Regulations, Title 17, Division 1, Chapter 4, Subchapter 8, Sections 6000-6075

³Receipt of the dose up to (and including) 4 days before the birthday will satisfy the childcare entry immunization requirement.

⁴Four doses at any age. However, 3 doses meet the requirement for ages 4-6 years if at least one dose was given on or after the 4th birthday and 3 doses meet requirement for age 7-17 years if at least one was given on or after the 2nd birthday. Receipt of the dose up to and including 4 days before the birthday will satisfy the school entry immunization requirement.

⁵Five doses at any age. However, 4 doses meet the requirement for ages 4-6 years if at least one was on or after the 4th birthday. Receipt of the dose up to and including 4 days before the birthday will satisfy the school entry immunization requirement.

⁶Two doses of measles-containing vaccine required (both on or after 1st birthday). One dose of mumps and rubella-containing vaccine required; mumps vaccine is not required for children 7 years of age and older. Receipt of the dose up to (and including) 4 days before the birthday will satisfy the school entry immunization requirement.

Note: DTaP/DTP represents doses of any diphtheria and tetanus toxoids and pertussis vaccines including diphtheria and tetanus toxoids, and any pertussis vaccine (DTP/DTaP). DTaP is the vaccine of choice for children 6 weeks through 6 years of age. Pediatric DT is recommended for children with valid contraindications to pertussis vaccine. DTP has not been used in the U.S. since 2002.

II. Key Findings and Key Implications

Key Findings

The 2009 Annual School Immunization Assessment Preschool and Kindergarten Assessment revealed the following:

- PBE levels for preschools and kindergartens in Los Angeles County remain lower than the statewide averages but have increased substantially since 2000. In fact, the levels of personal belief exemptions for both preschools and kindergartens have nearly tripled.
- The PBE level for preschools ranged from 0 to 85%. The PBE level for kindergartens ranged from 0 to 91%. There were 76 preschools and 71 kindergartens with PBE levels \geq 10%.
- In 2009, PBEs are geographically clustered in certain areas of Los Angeles County but schools with a PBE level \geq 10% were located in every SPA.
 - SPA 5 has the highest average PBE level for preschools and kindergartens. The PBE levels for preschools and kindergartens were higher than the County average, 362% and 330% respectively.
 - The average PBE level for kindergartens in SPAs 1 and 2 exceeded the County level by 40% and 45% respectively, and the average level for preschools in SPA 2 exceeded the County level by 54%.
- Private preschools and kindergartens have higher PBE levels than public preschools and kindergartens, 400% and 40% respectively. However, in 2009, high PBE levels were also found in public schools. In 2009, public schools with PBE levels \geq 10% were identified in 5 out of 8 SPAs.

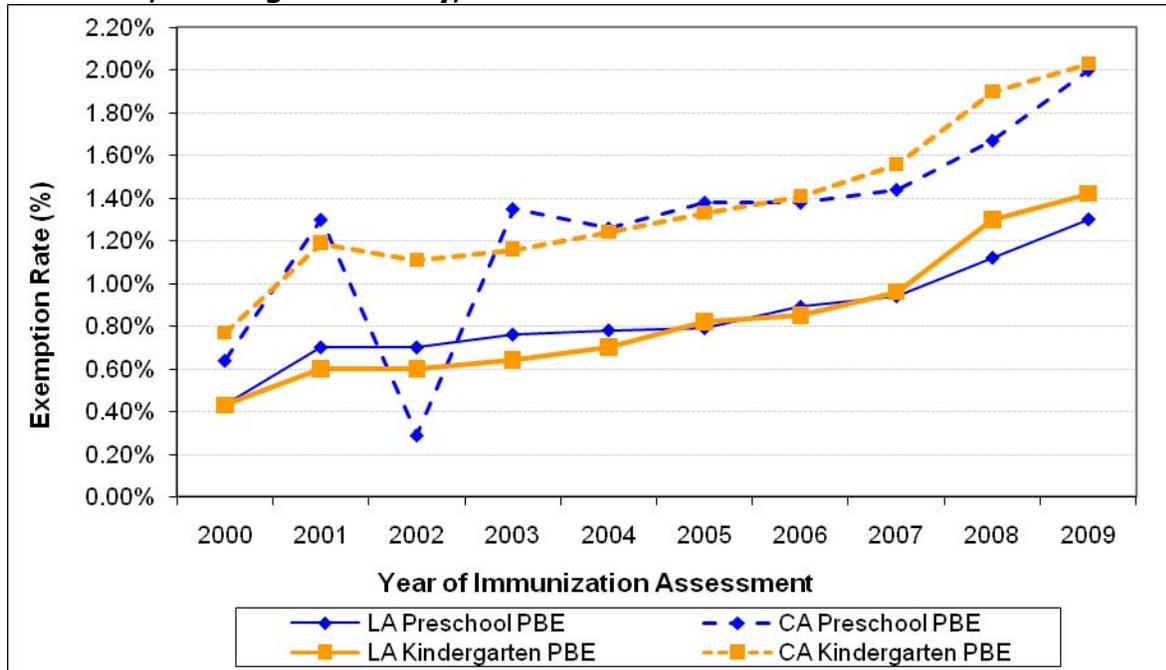
Key Implications

The ongoing risk of vaccine-preventable diseases is demonstrated by the increased number of measles, mumps, and pertussis cases that have occurred in Los Angeles County in 2010. To contain the current number of cases and prevent future epidemics, it is important that pediatric immunization coverage levels remain high and that PBE levels remain low.

PBE levels in Los Angeles County remain below the California average and are far lower than in many California counties. However, Countywide PBE levels have tripled since 2000 and are higher than levels prior to the 1989 measles epidemic. Because children who are not fully vaccinated due to personal belief exemptions are not fully protected against vaccine-preventable diseases (VPD), an increase in PBEs leaves more children at risk for VPDs and our County at increased risk for disease epidemics. Thus, it is important that healthcare providers, public health officials and other stakeholders continue to monitor PBE levels and maintain and strengthen parental support for and confidence in vaccines.

III. Personal Belief Exemptions in Los Angeles County for ALL Schools

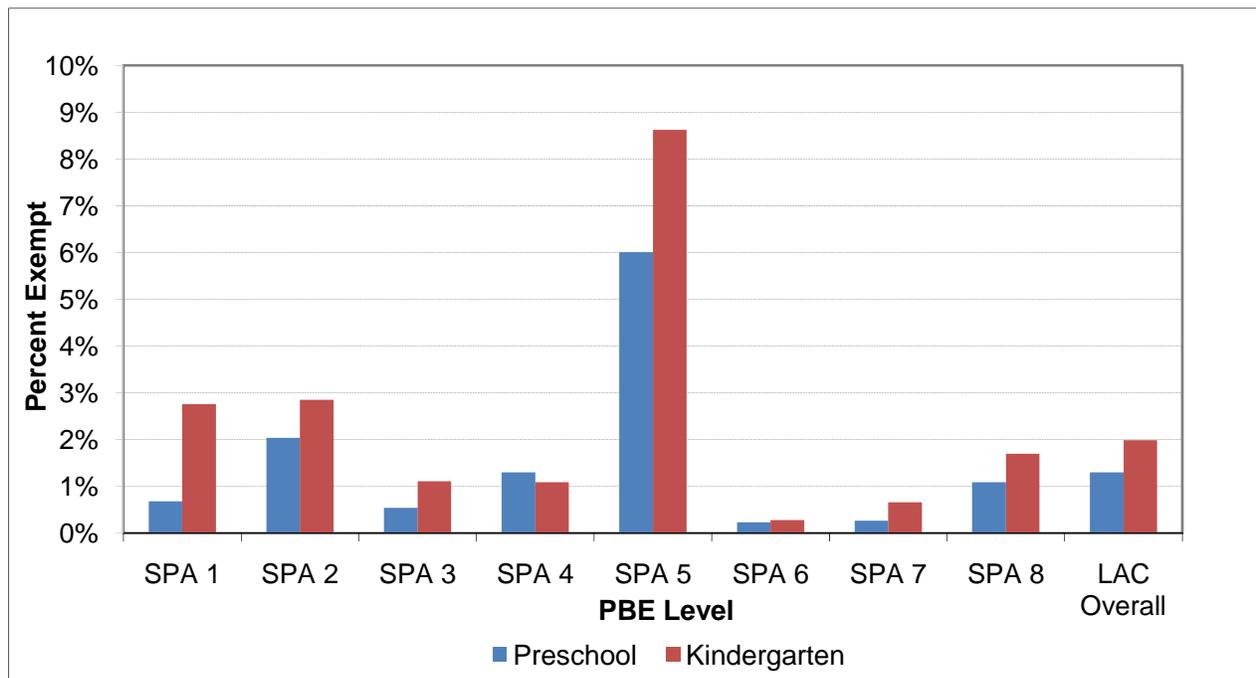
Figure 1: Personal belief exemptions among preschool and kindergarten enrollees¹, Los Angeles County, 2000-2009



¹ Includes all licensed schools that participated in the school immunization assessment.

IV. Personal Belief Exemptions in Los Angeles County for Schools with 10 or More Enrollees

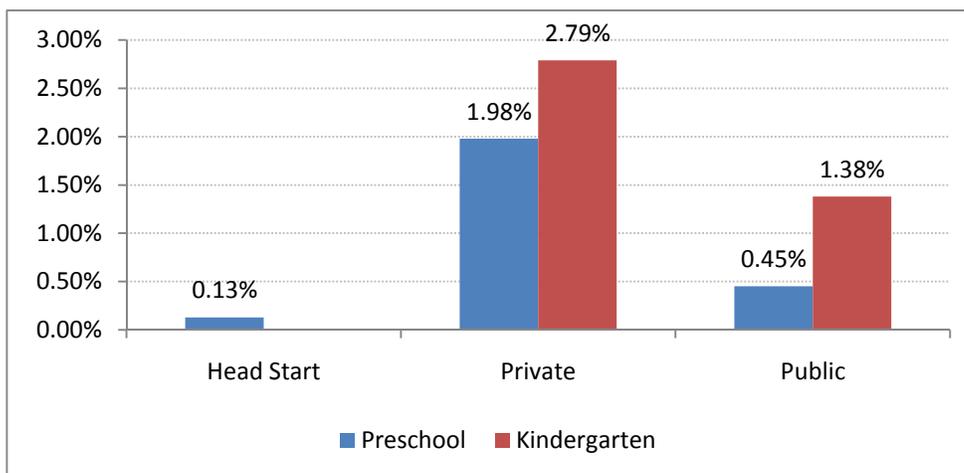
Figure 2: Personal belief exemptions among preschool and kindergarten enrollees¹ by Service Planning Area (SPA), Los Angeles County, 2009



	SPA 1	SPA 2	SPA 3	SPA 4	SPA 5	SPA 6	SPA 7	SPA 8	LAC Overall
Preschool	0.7%	2.0%	0.5%	1.3%	6.0%	0.2%	0.3%	1.1%	1.3%
Kindergarten	2.8%	2.9%	1.1%	1.1%	8.6%	0.3%	0.6%	1.7%	2.0%

¹ Schools with enrollment of less than 10 students were excluded from analysis.

Figure 3: Personal belief exemptions by school type¹, Los Angeles County, 2009



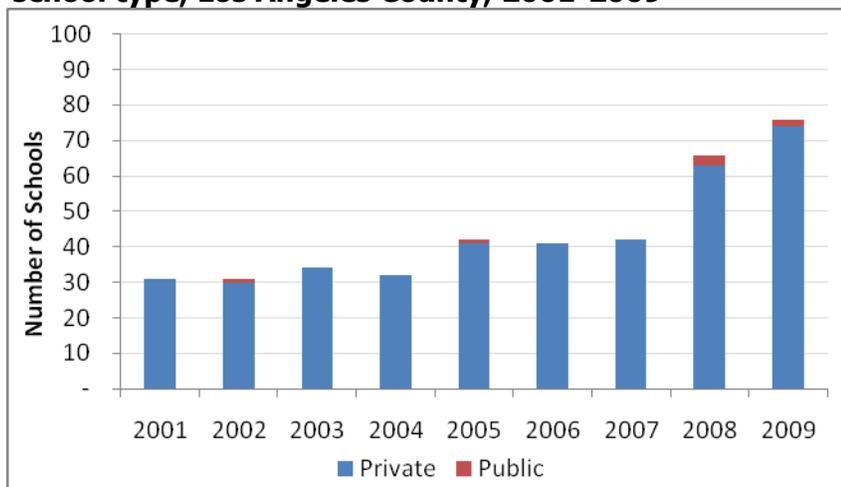
¹ Schools with enrollment of less than 10 students were excluded from analysis.
Note: Head Start schools only apply to preschool.

Table 2: Schools with personal belief exemptions greater than 10% among preschool¹ and kindergarten¹ enrollees by school type, Los Angeles County, 2009

School Type	Preschool		Kindergarten	
	No. of Schools	SPA	No. of Schools	SPA
Head Start	0	0	N/A	N/A
Private	74	2-5, 7-8	46	2 – 8
Public	2	2, 4	25	1 – 5
Total	76	2-5, 7-8	71	All

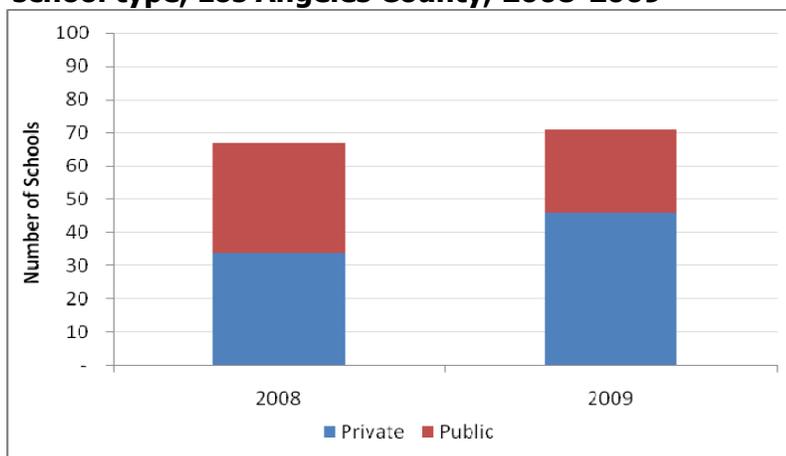
¹ Schools with enrollment of less than 10 students were excluded from analysis.

Figure 4: Schools with personal belief exemptions greater than 10% among preschool enrollees by school type, Los Angeles County, 2001-2009



¹ Schools with enrollment of less than 10 students were excluded from analysis.

Figure 5: Schools with personal belief exemptions greater than 10% among kindergarten enrollees by school type, Los Angeles County, 2008-2009



¹ Schools with enrollment of less than 10 students were excluded from analysis.

Note: Data not available for the years 2001-2007.

V. Personal Belief Exemptions: PRIVATE SCHOOLS

Table 3: PBE levels among preschool¹ and kindergarten enrollees¹ in private schools, Los Angeles County, 2009

Preschool Enrollees					Kindergarten Enrollees			
No. of enrollees	Average PBE (range)	No. of schools with PBE ≥ 10% ¹	Rank by Avg. PBE	SPA	No. of enrollees	Average PBE (range)	No. of schools with PBE ≥ 10% ¹	Rank by Avg. PBE
2,301	0.9% (0-6.7%)	0	5	SPA 1	362	1.7% (0-6.7%)	0	5
17,336	2.6% (0-57.1%)	21	2	SPA 2	3,341	4.2% (0-90.9%)	10	2
15,082	0.9% (0-35.0%)	7	5	SPA 3	2,473	1.7% (0-28.0%)	5	5
6,646	2.0% (0-40.7%)	10	3	SPA 4	1,147	2.1% (0-21.6%)	4	4
7,799	6.7% (0-85.0%)	27	1	SPA 5	1,805	10.9% (0-70.6%)	16	1
4,230	0.4% (0-9.1%)	0	7	SPA 6	645	0.5% (0-16.7%)	1	8
7,408	0.4% (0-10.0%)	1	7	SPA 7	1,348	1.1% (0-14.5%)	2	7
12,787	1.5% (0-37.1%)	8	4	SPA 8	1,709	3.0% (0-65.4%)	8	3
73,589	2.0% (0-85.0%)	74		All SPAs	12,830	2.8% (0-90.9%)	46	

¹ Schools with enrollment of less than 10 students were excluded from analysis.

VI. Personal Belief Exemptions: PUBLIC SCHOOLS

Table 4: PBE levels among preschool¹ and kindergarten enrollees¹ in private schools, Los Angeles County, 2009

Preschool Enrollees					Kindergarten Enrollees			
No. of enrollees	Average PBE (range)	No. of schools with PBE ≥ 10% ¹	Rank by Avg. PBE	SPA	No. of enrollees	Average PBE (range)	No. of schools with PBE ≥ 10% ¹	Rank by Avg. PBE
742	0.2% (0-1.9%)	0	4	SPA 1	3,900	3.1% (0-34.4%)	2	2
5,254	1.0% (0-12.5%)	1	2	SPA 2	22,070	2.1% (0-30.4%)	6	3
2,607	0.2% (0-4.0%)	0	4	SPA 3	20,482	0.9% (0-12.5%)	3	5
4,411	0.6% (0-10.0%)	1	3	SPA 4	10,802	0.7% (0-12.5%)	1	6
503	1.5% (0-5.9%)	0	1	SPA 5	4,397	6.4% (0-49.2%)	13	1
4,181	0% (0-1.5%)	0	7	SPA 6	15,864	0.2% (0-4.2%)	0	8
1,532	0% (0-0%)	0	8	SPA 7	17,134	0.5% (0-6.0%)	0	7
4,783	0.3% (0-8.9%)	0	6	SPA 8	17,348	1.2% (0-8.3%)	0	4
24,013	0.4% (0-12.5%)	2		All SPAs	111,997	2.0% (0-49.2%)	25	

¹ Schools with enrollment of less than 10 students were excluded from analysis.

VII. Personal Belief Exemptions: PRESCHOOL BY ZIP CODE

Table 5: Top 20 PBE levels among preschool¹ enrollees by zip code, Los Angeles County, 2009

Level	Zip Code	SPA	City	Average School PBE Level	No. of schools with PBE level $\geq 10\%$ ¹	Enrollment	In the top 20 Kindergarten PBE levels
1	90265	5	MALIBU	18.8%	4	264	5 th
2	90272	5	PACIFIC PALISADES	18.8%	4	550	3 rd
3	91403	2	SHERMAN OAKS	13.2%	1	134	16 th
4	91390	2	SANTA CLARITA	12.5%	1	24	-
5	91302	2	CALABASAS	8.9%	0	52	-
6	90404	5	SANTA MONICA	8.6%	4	619	6 th
7	90049	5	LOS ANGELES (NEAR BEL AIR)	8.0%	1	549	-
8	90039	4	LOS ANGELES (NEAR LOS FELIZ)	7.6%	1	377	-
9	90291	5	VENICE	7.4%	3	459	19 th
10	91040	2	SUNLAND	7.0%	2	130	-
11	90077	5	LOS ANGELES (NEAR BEL AIR)	6.6%	1	328	-
12	90401	5	SANTA MONICA	6.3%	1	171	-
13	90068	4	LOS ANGELES (NEAR HOLLYWOOD)	6.1%	1	113	8 th
14	90608	7	WHITTIER	6.1%	0	82	-
15	90292	5	MARINA DEL REY	6.1%	1	121	-
16	90403	5	SANTA MONICA	6.0%	1	584	-
17	90064	5	LOS ANGELES (NEAR WEST LOS ANGELES)	5.8%	3	747	-
18	91325	2	NORTHRIDGE	5.5%	1	715	14 th
19	91362	2	WEST LAKE VILLAGE	5.4%	0	149	-
20	91024	3	SIERRA MADRE	5.3%	1	272	-

¹ Schools with enrollment of less than 10 students were excluded from analysis.

VIII. Personal Belief Exemptions: PRESCHOOL BY CITY

Table 6: Top 20 PBE levels among preschool¹ enrollees by city, Los Angeles County, 2009

Level	City	SPA	Average School PBE Level	No. of schools with PBE level \geq 10%¹	Enrollment	In the top 20 Kindergarten PBE levels
1	MALIBU	5	19.7%	3	250	4 th
2	BEL AIR	5	19.7%	1	66	-
3	PACIFIC PALISADES	4/5	16.7%	4	572	3 rd
4	MALIBU BEACH	5	14.2%	1	14	-
5	SHERMAN OAKS	2	7.9%	3	612	-
6	HOLLYWOOD	4	7.5%	2	268	-
7	VENICE	5	7.4%	3	459	10 th
8	WEST HOLLYWOOD	4	7.2%	0	45	-
9	SANTA MONICA	5	6.5%	7	1,848	7 th
10	MARINA DEL REY	5	6.1%	1	121	-
11	TOPANGA	2	5.9%	1	40	1 st
12	CALABASAS	2	5.7%	0	172	15 th
13	SUNLAND	2	5.6%	2	158	-
14	LA CANADA	2	5.3%	1	798	-
15	MANHATTAN BEACH	8	5.1%	1	1,648	-
16	ROLLING HILLS ESTATES	8	4.9%	1	60	-
17	CASTAIC	2	4.8%	0	124	-
18	RESEDA	2	4.5%	2	1,025	-
19	ENCINO	2	4.5%	1	398	-
20	VALLEY VILLAGE	2	4.2%	0	185	-

¹ Schools with enrollment of less than 10 students were excluded from analysis.

IX. Personal Belief Exemptions: KINDERGARTEN BY ZIP CODE

Table 7: Top 20 PBE levels among kindergarten¹ enrollees by Zip code, Los Angeles County, 2009

Level	Zip Code	SPA	City	Average School PBE Level	No. of schools with PBE level $\geq 10\%$¹	Enrollment	In the top 20 Preschool PBE levels
1	90290	2	TOPANGA	59.2%	2	80	-
2	93243	1	LITTLE ROCK/GORMAN	29.5%	1	44	-
3	90272	5	PACIFIC PALISADES	18.4%	5	342	2 nd
4	90265	5	MALIBU	17.2%	2	142	1 st
5	90404	5	SANTA MONICA	16.9%	2	411	6 th
6	90035	5	LOS ANGELES (NEAR PICO/ROBERTSON)	15.1%	2	316	-
7	90068	4	LOS ANGELES (NEAR HOLLYWOOD)	12.5%	1	48	13 th
8	90066	5	LOS ANGELES (NEAR MAR VISTA)	11.9%	3	626	-
9	90277	8	REDONDO BEACH	11.8%	2	362	-
10	91602	2	NORTH HOLLYWOOD	9.6%	1	128	-
11	90405	5	SANTA MONICA	9.0%	1	288	-
12	90402	5	SANTA MONICA	9.0%	1	107	-
13	91325	2	NORTHRIDGE	8.8%	2	413	18 th
14	90034	5	LOS ANGELES (NEAR CULVER CITY)	8.8%	1	480	-
15	91403	2	SHERMAN OAKS	8.6%	0	151	3 rd
16	91313	2	CHATSWORTH	8.3%	0	12	-
17	90025	5	LOS ANGELES (NEAR WEST LOS ANGELES)	8.0%	1	297	-
18	90291	5	PLAYA DEL REY/VENICE	7.8%	3	258	9 th
19	91406	2	VAN NUYS	7.7%	1	630	-
20	91411	2	VAN NUYS	6.9%	1	352	-

¹ Schools with enrollment of less than 10 students were excluded from analysis.

X. Personal Belief Exemptions: KINDERGARTEN BY CITY

Table 8: Top 20 PBE levels among kindergarten¹ enrollees by city, Los Angeles County, 2009

Level	City	SPA	Average School PBE Level	No. of schools with PBE level \geq 10%¹	Enrollment	In the top 20 Preschool PBE levels
1	TOPANGA	2	59.2	2	80	11 th
2	LAKE BALBOA	2	38.5	1	88	-
3	PACIFIC PALISADES	4/5	18.4	5	342	3 rd
4	MALIBU	5	17.2	2	142	1 st
5	GORMAN	1	14.8	1	57	-
6	AGOURA HILLS	2	12.4	1	102	-
7	SANTA MONICA	5	12.3	5	994	9 th
8	LEONA VALLEY	3	8.7	0	23	-
9	REDONDO BEACH	8	8.4	2	826	-
10	VENICE BEACH	5	7.1	3	227	7 th
11	NORTHRIDGE	2	5.5	2	1,004	-
12	LITTLE ROCK	1	5.4	0	117	-
13	VALENCIA	2	5.2	0	567	-
14	EL SEGUNDO	8	5.1	0	230	-
15	CALABASAS	2	5.0	0	461	12 th
16	STUDIO CITY	2	4.9	0	143	-
17	PALOS VERDES ESTATES	8	4.8	1	123	-
18	CANYON COUNTRY	2	4.5	2	727	-
19	TARZANA	2	4.4	1	390	-
20	PLAYA DEL REY	8	4.3	0	47	-

¹ Schools with enrollment of less than 10 students were excluded from analysis.

XI. Personal Belief Exemptions by City/Community

Figure 6: Personal belief exemptions among preschool enrollees¹ by City/Community based on State levels, Los Angeles County, 2009

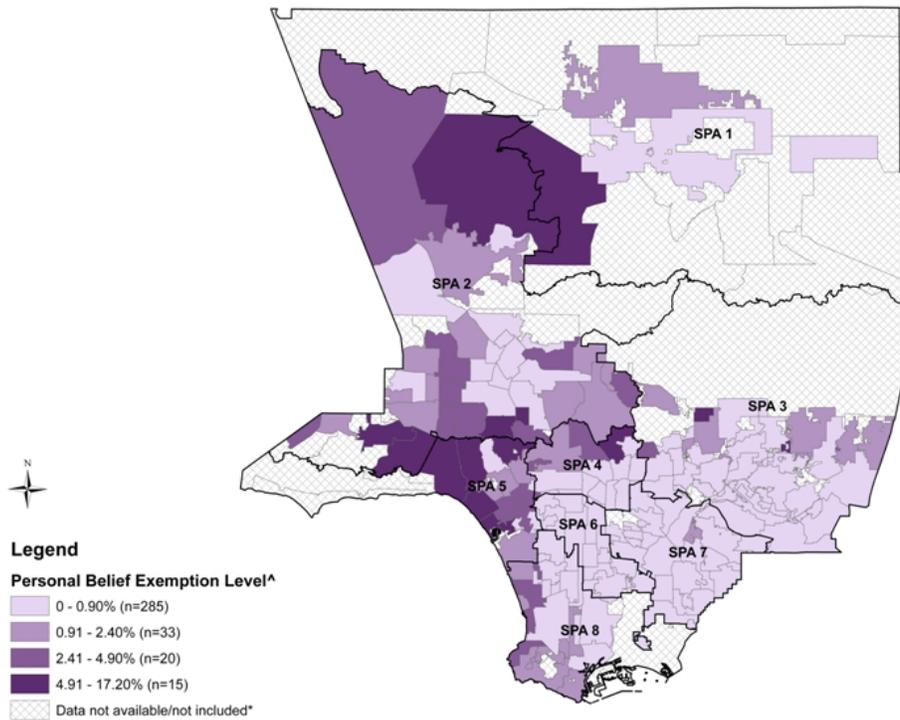
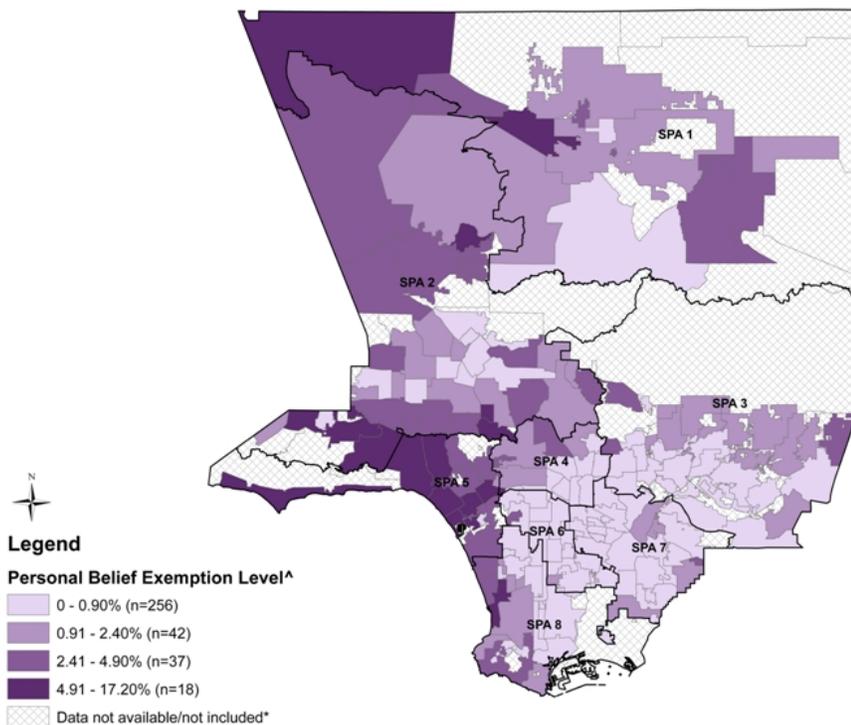


Figure 7: Personal belief exemptions among kindergarten enrollees¹ by City/Community based on State levels, Los Angeles County, 2009



¹Schools with enrollment of less than 10 students were excluded from analysis.

[^]Levels based on State defined categories.

*Long Beach, Pasadena, and cities/communities where school data was not available

Herd Immunity:

Herd immunity occurs when the vaccination of a portion of the population, or herd, provides protection to unprotected persons (e.g. persons too young to be fully vaccinated or the vaccine is contraindicated). The higher the proportion of individuals who are vaccinated, the less likely a susceptible person will come into contact with an infectious person. The proportion of the population required to prevent the spread of highly infectious diseases such as measles and pertussis is estimated to be as high as 94%. Consequently, schools that have PBE levels higher than 6% are at higher risk for the spread of these diseases.

Figure 8: Personal belief exemptions among preschool enrollees¹ by City/Community based on herd immunity theory, Los Angeles County, 2009

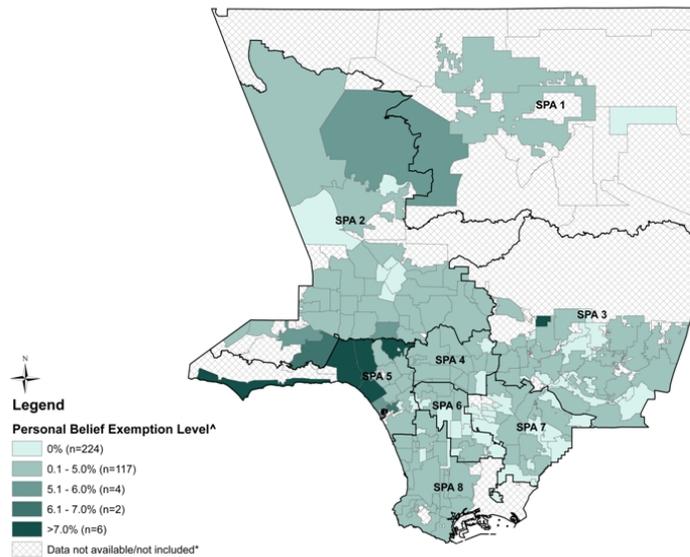
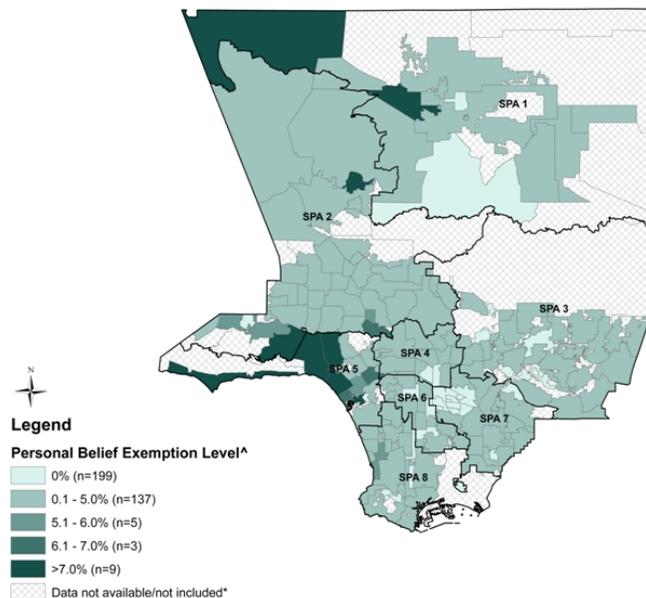


Figure 9: Personal belief exemptions among kindergarten enrollees¹ by City/Community based on herd immunity theory, Los Angeles County, 2009



¹Schools with enrollment of less than 10 students were excluded from analysis.

[^]Levels based on State defined categories.

*Long Beach, Pasadena, and cities/communities where school data was not available

Next Steps

The State's Immunization Branch has recently conducted a special population study to determine which vaccines are most frequently exempted in order to better target education efforts for parents. The study found that the vaccine doses most likely to be missed are the first dose of Varicella, the third dose of Hepatitis B, and the second dose of MMR.¹ LAC will be conducting a Personal Belief Exemptions Needs Assessment with schools to further understand the PBE trends in the County.

For more information about PBEs and immunizations, visit
www.publichealth.lacounty.gov/ip

References:

1. Lee T, Sharifi M, Nickell S. Vaccination Status and School Practices Among California Kindergartens with High Number of Personal Beliefs Exemptors. Retrieved May 18, 2010 from CDC site. Web site:<http://cdc.confex.com/cdc/nic2010/webprogram/Paper22752.html>