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June 29, 2015

TO: Each Health Deputy

FROM: Cynthia A. Harding, M.P.H.
Interim Director

SUBJECT: **ADVANCE COPY: "WHAT DO PARENTS THINK? KNOWLDEGE AND ATTITUDES ABOUT IMMUNIZATION"**

Attached please find the latest LA Health brief on immunizations in Los Angeles County. The report presents results from the 2011 Los Angeles County Health Survey on parental knowledge and attitudes about immunization, and also provides information showing that immunization rates among school-aged children in the County have declined in recent years. This report will be released this week. Upon official release, the report will be available at www.lapublichealth.org/ha.

We hope you will find this publication useful and informative. If you have any questions, please contact Public Health External Relations and Communications at (213) 989-7065.

CAH:sjk

Attachment

c: Jeffrey Gunzenhauser, M.D., M.P.H.
Mason Matthews
Sharon Reichman

LA Health
May 2015
County of Los Angeles Public Health

WHAT DO PARENTS THINK? KNOWLEDGE AND ATTITUDES ABOUT IMMUNIZATION

Introduction

The dramatic reduction in vaccine-preventable diseases (VPDs) is one of the greatest public health achievements in American history.[1] Due to widespread use of vaccines, many VPDs are rare and most people have never seen their harmful effects. Currently, sixteen diseases are preventable for children and adolescents through routine use of vaccines (**www.cdc.gov/vaccines/vpd-vac/child-vpd.htm**). A 2009 economic analysis concluded that routine vaccination of each US birth cohort prevents approximately 20 million cases of illness and 42,000 deaths, resulting in a net savings of nearly $14 billion in direct costs and $69 billion in total societal costs.[2]

A parent's decision to vaccinate his or her child is often based on information from past experiences, advice from health care providers, and input from friends and family members.[3] In recent years, public attention has shifted toward risks of vaccination instead of benefits. A number of factors may have contributed to this shift, including perceived low risk of contracting VPDs, a rapidly expanded immunization schedule for infants and toddlers, increased reports of adverse events after immunization (whether caused by immunization or not), and fear flamed by the debunked claims that vaccines may cause conditions such as autism.[4, 5] The media's focus on vaccine-related controversies, rather than scientific facts about the safety and proven efficacy of vaccines, can undermine public confidence and may negatively impact parental knowledge, attitudes, and beliefs.[6]

Immunization Coverage

Overall, vaccination coverage remains high in the US. However, VPDs have not been eliminated. Every year, hundreds of cases are reported in Los Angeles (LA) County, and outbreaks occur in schools, child care centers, and other community settings. In 2014, there were record numbers of pertussis cases reported in LA County, and in 2015, California experienced a measles outbreak which sickened 28 residents in the County.

Diminishing immunity associated with the acellular pertussis vaccine and genetic mutation of pertussis bacteria may in part explain the reemergence of pertussis in the US.[7] Evidence also shows that clustering of underimmunized and unimmunized population groups contributes to outbreaks of VPDs.[8] Of the 28 recent measles cases, fifteen were unvaccinated, eight of which were due to personal belief exemptions (PBEs).

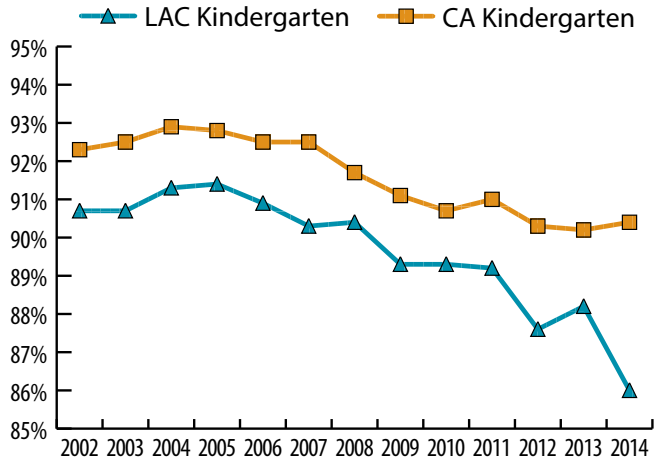
Under the California Health and Safety Code, children are required to receive selected immunizations in order to attend public and private elementary and secondary schools, child care centers, family day care homes, nursery schools, day nurseries, and developmental centers. These requirements are recommended by the Community Preventive Services Task Force as an effective means for increasing pediatric immunization rates and decreasing vaccine-related morbidity and mortality.[9]

Based on annual school assessment data, immunization rates among school-aged children in

1. *U.S. Centers for Disease Control and Prevention. Ten Great Public Health Achievements -- United States, 1900-1999. Atlanta, GA: U.S. Centers for Disease Control and Prevention. MMWR. 1999;48(12)241-243.*
2. *Zhou F, Shefer A, Wenger J, Messonnier M, et al. Economic evaluation of the routine childhood immunization program in the United States, 2009. Pediatrics. 2014;133(4):577-585.*
3. *Gust DA, Strine TW, Maurice E, Smith P, et al. Underimmunization among children: effects of vaccine safety concerns on immunization status. Pediatrics. 2004;114(1):e16-22.*
4. *Gust DA, Woodruff R, Kennedy A, Brown C, et al. Parental perceptions surrounding risks and benefits of immunization. Seminars in Pediatric Infectious Diseases. 2003;14(3):207-212.*
5. *Dixon G, Clarke C. The effect of falsely balanced reporting of the autism-vaccine controversy on vaccine safety perceptions and behavioral intentions. Health Educ Res. 2013;28(2):352-359.*
6. *Davis TC, Frederickson DD, Kennen EM, Humiston SG, et al. Vaccine risk/benefit communication: effect of an educational package for public health nurses. Health Education & Behavior. 2006;33(6):787-801.*
7. *Komatsu E, Yamaguchi F, Abe A, Weiss AA, et al. Synergic effect of genotype changes in pertussis toxin and pertactin on adaptation to an acellular pertussis vaccine in the murine intranasal challenge model. Clin Vaccine Immunol. 2010; 17(5): 807–812.*
8. *Atwell JE, Van Otterloo J, Zipprich J, Winter K, et al. Nonmedical vaccine exemptions and pertussis in California, 2010. Pediatrics. 2013;132(4): 624-630.*
9. *The Guide to Community Preventive Services. Increasing appropriate vaccination: vaccination requirements for child care, school, and college attendance. Available at www.thecommunityguide.org/vaccines/requirements_school.html. Accessed April 22, 2015.*

California and in LA County have declined over the past decade (Figure 1). At the start of the 2014 school year, only 86% of kindergarteners in the County were up-to-date with their immunizations, compared to over 90% of kindergarteners statewide. Fourteen percent of LA County kindergarten students were not fully immunized; these included 1.6% with PBEs, 0.1% with a permanent medical exemption (see **Vaccination Exemptions** box), and 12.3% conditional entrants, i.e. students missing doses that are not yet due or students missing delinquent doses they cannot currently receive due to spacing interval requirements for certain vaccines.[10]

FIGURE 1 Percent of Kindergarten Students Up-To-Date¤ with Immunizations, Los Angeles County (LAC) and California (CA), 2002-2014



¤ Up-to-date: Kindergarten enrollee has received 4+ DTaP/DTP, 3+ Polio, 2 MMR, 3 Hep B, and 1 Varicella (or physician-documented Varicella Disease).

Data Source: Los Angeles County Department of Public Health, Immunization Program, Annual School Immunization Assessment: Preschool, Kindergarten, and 7-12 Grade.

Although PBEs to immunizations represent only a small fraction of parents, evidence suggests these parents tend to cluster in selected communities. For example, the West Service Planning Area (SPA) had the highest percent of kindergarten students with PBEs at 6.4%, while the South SPA had the lowest with 0.1% (Figure 2).[10] Such clustering of vaccine waivers can profoundly impact prevention of VPDs, because in order to prevent transmission of these infections, a sufficient proportion of the population must remain immune to infection through vaccination and/or prior illness. This protection, known as herd immunity, typically provides safety for individuals who are not vaccinated (such as newborns and those who cannot be vaccinated due to certain medical conditions).[11] Diminished herd immunity resulting from decreased vaccination coverage puts communities at elevated risk for outbreaks.

Vaccination Exemptions

California law allows parents and guardians to request medical and personal belief exemptions (PBEs) to school immunization requirements.

Medical exemptions are used for children whose medical condition precludes them from receiving recommended vaccines permanently or temporarily. Medical exemptions require a physician's signature.

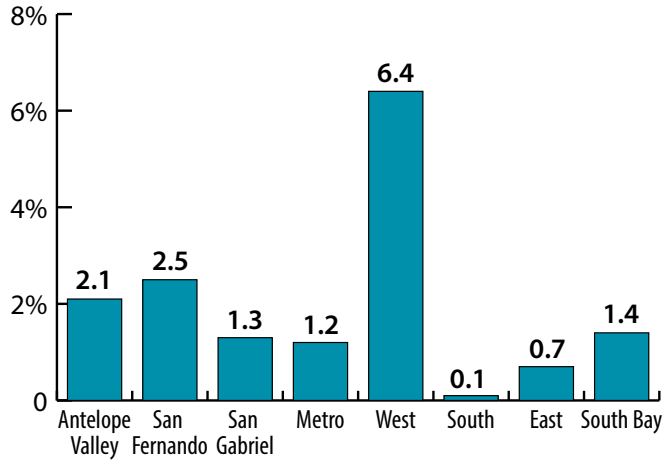
Children may also be exempted from receiving one or more vaccines required for school entry if their parents hold personal beliefs that are contrary to immunizations. Before 2014, parents could simply sign a statement on the school immunization record to request such a personal belief exemption. However, on January 1, 2014, California implemented a new PBE requirement for schools and licensed child care centers, due to enactment of Assembly Bill 2109. Parents who wish to file a PBE must now submit an exemption form that has been signed by a health care professional, indicating they have been educated about the risks of not vaccinating their children. Parents whose religion does not permit them to receive medical advice or treatment from a health care practitioner are not required to consult with a provider, but must sign and submit a PBE form.

At this time, the California legislature is considering Senate Bill 277, which may impact parents' ability to request an exemption for personal beliefs.

10 *Los Angeles County Department of Public Health, Immunization Program, 2014-2015 Immunization Status of Kindergarten Students, California (in schools with ten or more kindergarten students enrolled).*

11 *National Institute of Allergy and Infectious Diseases. Community Immunity ("Herd" Immunity). Available from http://www.niaid.nih.gov/topics/Pages/communityImmunity.aspx.*

2 FIGURE Percent of Kindergarten Students with Personal Belief Exemptions by Service Planning Area, 2014-15 School Year



Data Source: Los Angeles County Department of Public Health, Immunization Program, 2014-2015 Immunization Status of Kindergarten Students, California (in schools with ten or more kindergarten students enrolled).

To better understand knowledge and attitudes about vaccination among LA County parents of children ages 0-17 years, including biological, foster, adoptive, and step parents, the 2011 Los Angeles County Health Survey (LACHS) included three questions to assess immunization knowledge and attitudes:

1) Do you think that it is safe for a child under one year of age to get immunized? (*Immunization Safety for Infants*)

2) Do you think that it is normal or acceptable for a child to experience mild fever, swelling, or mild rash after getting a shot? (*Acceptance of Side Effects*)

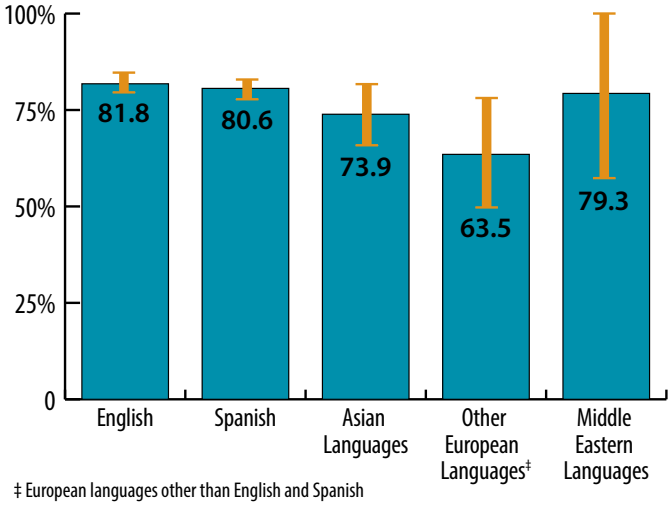
3) Do you think that parents should be allowed to send their children to school even if they are not immunized? (*School Attendance OK for Unimmunized*)

Immunization Safety for Infants

This first question aimed to assess age-related vaccine safety concerns among parents. Overall, 80.7% of parents thought it was safe for an infant to get immunized, 13.4% thought it was not safe, and 5.9% reported they did not know (Table 1).

- A higher percentage of mothers (84.5%) thought it was safe to immunize children under one year old than fathers (70.5%).
- About 84% of white and 86.9% of Native Hawaiian and other Pacific Islander parents thought it was safe for infants to get immunized; the percentages were lower among parents who are Latino (80.5%), Asian (78.2%), and African American (77.4%).
- A lower percentage of parents who reported speaking mostly Asian languages (73.9%) and other European languages (63.5%) at home thought it was safe for a child under one year of age to get immunized than those who reported speaking mostly English (81.8%) or Spanish (80.6%) or Middle Eastern languages (79.3%) at home (Figure 3).

3 FIGURE Percent of Children (0-17 years old) Whose Parents Think It Is Safe for an Infant to Get Immunized, by Language Spoken Most Often at Home, LACHS 2011



‡ European languages other than English and Spanish

1 TABLE Knowledge and Attitudes about Immunization among Parents of Children 0-17 Years Old, LACHS 2011

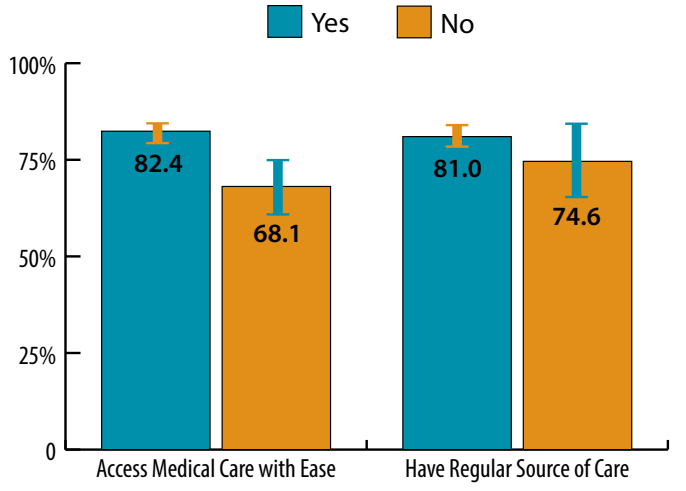
PARENT PERCEPTIONS OF:

	Immunization Safety § for Infants		Acceptance of Side Effects ¶		School Attendance OK ¶ for Unimmunized	
	Percent (%)	95% CI	Percent (%)	95% CI	Percent (%)	95% CI
Los Angeles County	80.7	78.9 - 82.4	67.7	65.6 - 69.8	21.2	19.3 - 23.1
Parent Gender						
Male	70.5	66.5 - 74.5	67.3	63.2 - 71.4	22.9	19.1 - 26.6
Female	84.5	82.7 - 86.3	67.8	65.3 - 70.3	20.6	18.4 - 22.8
Parent Race/Ethnicity						
Latino	80.5	77.9 - 83.0	59.1	56.0 - 62.1	18.2	15.7 - 20.7
Foreign Born	82.3	79.6 - 84.9	54.5	50.9 - 58.2	16.0	13.2 - 18.7
US Born	77.2	71.8 - 82.6	69.0	63.4 - 74.5	23.2	18.0 - 28.4
White	84.2	81.7 - 86.6	86.4	83.8 - 89.0	26.8	23.2 - 30.3
African American	77.4	70.6 - 84.2	61.7	53.4 - 70.0	21.7	14.5 - 28.8
Asian	78.2	72.9 - 83.6	78.8	72.3 - 85.2	23.7	17.4 - 30.1
Foreign Born	76.7	70.4 - 83.0	78.2	71.3 - 85.1	20.2	13.7 - 26.8
US Born	84.8	76.8 - 92.8	81.2	64.0 - 98.3	38.3	22.5 - 54.1
Native Hawaiian & other Pacific Islander^	86.9	62.7-100.0	60.9*	27.1 - 94.8	-	- - -
Parent Education						
Less than high school	76.1	72.2- 79.9	47.4	42.6 - 52.1	15.7	12.1 - 19.2
High school	85.3	82.1- 88.5	68.2	63.3 - 73.2	16.3	12.5 - 20.0
Some college or trade school	76.1	71.3 - 80.8	70.9	66.2 - 75.6	24.0	19.4 - 28.6
College or post graduate degree	85.0	82.9 - 87.2	82.3	79.7 - 84.9	27.1	23.9 - 30.3
Federal Poverty Level $						
0-99% FPL	78.4	74.9 - 82.0	54.9	50.5 - 59.3	17.5	14.0 - 21.0
100-199% FPL	81.7	78.2 - 85.3	64.0	59.6 - 68.3	19.9	15.9 - 23.8
200-299% FPL	81.1	76.2 - 85.9	69.6	63.1 - 76.0	23.8	17.7 - 29.9
300% or above FPL	82.1	79.6 - 84.6	82.8	80.2 - 85.3	25.2	22.4 - 28.0
Service Planning Area						
Antelope Valley	84.5	79.7 - 89.3	63.6	54.1 - 73.0	22.3	15.2 - 29.3
San Fernando	81.9	78.5 - 85.2	71.6	67.3 - 75.9	24.4	20.3 - 28.5
San Gabriel	77.9	73.6 - 82.3	75.6	71.4 - 79.9	20.5	16.2 - 24.9
Metro	84.5	79.7 - 89.3	68.0	61.4 - 74.6	20.9	14.9 - 26.8
West	77.9	72.1 - 83.8	82.0	76.4 - 87.5	30.8	24.4 - 37.2
South	79.2	73.5 - 84.9	55.4	48.2 - 62.7	15.4	9.9 - 20.9
East	79.1	73.9 - 84.2	61.7	55.6 - 67.8	19.6	14.3 - 25.0
South Bay	82.2	77.5 - 86.9	65.3	59.7 - 70.9	20.8	16.0 - 25.6

§ Percent of Children (0-17 years old) Whose Parents Think It Is Safe for a Child under One Year of Age to Get Immunized.
¶ Percent of Children (0-17 years old) Whose Parents Think It Is Normal or Acceptable for a Child to Experience Mild Fever, Swelling, or Mild Rash after Getting a Shot.
¶ Percent of Children (0-17 years old) Whose Parents Think Children should be Allowed to Attend School Even If They Are Not Immunized.
$ Based on U.S. Census 2009 Federal Poverty Level (FPL) thresholds which for a family of four (2 adults, 2 dependents) correspond to annual incomes of $21,756 (100% FPL), $43,512 (200% FPL), and $65,268 (300% FPL).
* The estimate is statistically unstable (relative standard error ≥23%) and therefore may not be appropriate to use for planning or policy purposes.
- For purposes of confidentiality, results with cell sizes less than 5 are not reported.
^ Data by place of birth (US vs. Foreign) are not presented due to limited sample size.

- Parental knowledge about the safety of immunizing infants varied by children's access to medical care. Among parents who said it was easy to access medical care for their children, 82.4% thought it was safe for an infant to be immunized. Among parents who reported it was difficult to access care for their children, only 68.1% thought it was safe (Figure 4).

FIGURE 4 Percent of Children (0-17 years old) Whose Parents Think It Is Safe for a Child under One Year of Age to Get Immunized, by Access to Care, LACHS 2011



- Furthermore, a higher percentage of parents whose children had a regular source of care (81.0%) reported thinking it was safe to immunize infants, compared to parents of children with no regular source of care (74.6%) (Figure 4).

Acceptance of Side Effects

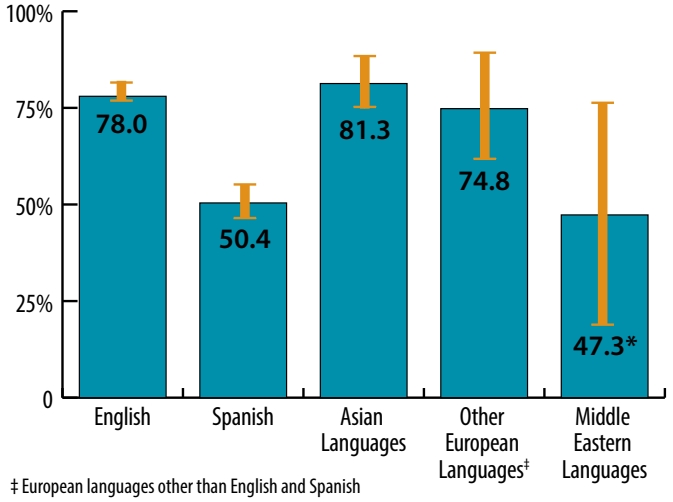
The second question evaluated parental expectations and tolerance of normal, mild side effects after immunization. Over two-thirds of parents (67.7%) surveyed in the LACHS reported they thought it was normal or acceptable for a child to experience mild fever, swelling, or mild rash after getting a shot, 29.2% thought it was not normal or acceptable, and 3.1% of parents reported they did not know (Table 1).

- About 86% of white parents thought it was acceptable for a child to experience mild reactions after immunization, compared to 78.8% of Asian, 61.7% of African American, 60.9%* of Native Hawaiian and other Pacific Islander, and 59.1% of Latino parents.
- U.S.-born Latino parents (69.0%) were more likely to report that mild reactions after immunization were acceptable than foreign-born Latino parents (54.5%).
- Parents with higher levels of education were more likely to accept that mild reactions may occur after immunization compared to parents with lower levels of education.
- Acceptance of mild side effects after immunization was also positively associated with household income, with the lowest acceptance among those living in poverty (54.9%) and the highest among parents with household incomes at or above 300% federal poverty level (FPL) (82.8%).
- Acceptance of mild reactions after immunization varied dramatically across SPAs with the highest found among parents residing in the West SPA (82.0%) and the lowest among parents residing in the South SPA (55.4%).
- A much lower percentage (50.4%) of parents who reported speaking mostly Spanish at home thought it was acceptable for a child to experience mild reactions after getting a shot,

**The estimate is statistically unstable (relative standard error ≥23%) and therefore may not be appropriate to use for planning or policy purposes.*

5 FIGURE

Percent of Children (0-17 years old) Whose Parents Think It Is Normal or Acceptable for a Child to Experience Mild Fever, Swelling, or Mild Rash after Getting a Shot, by Language Spoken Most Often at Home, LACHS 2011

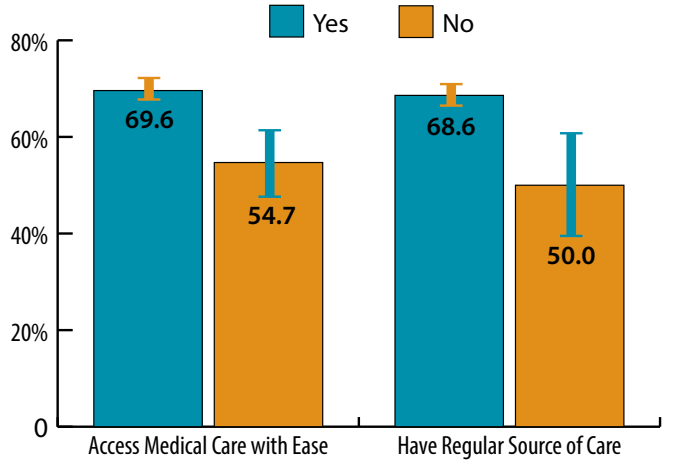


‡ European languages other than English and Spanish
*The estimate is statistically unstable (relative standard error ≥23%) and therefore may not be appropriate to use for planning or policy purposes.

compared to parents who reported speaking mainly other European languages (74.8%), English (78.0%), and Asian languages (81.3%) (Figure 5).

6 FIGURE

Percent of Children (0-17 years old) Whose Parents Think It Is Normal or Acceptable for a Child to Experience Mild Fever, Swelling, or Mild Rash after Getting a Shot, by Access to Care, LACHS 2011



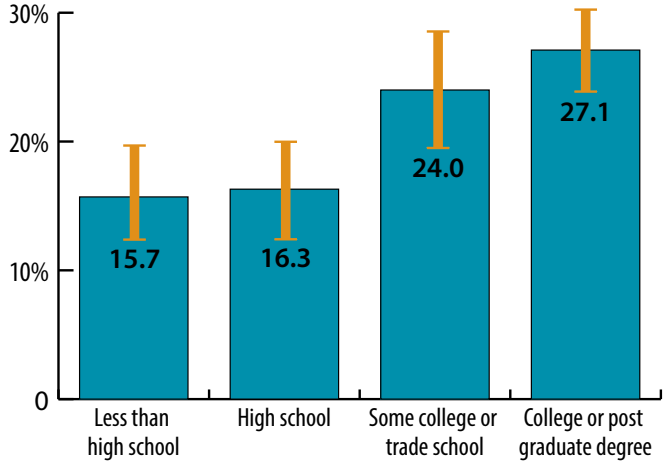
- A higher percentage (69.6%) of parents whose children had easy access to medical care reported thinking it was normal for a child to experience mild reactions after getting a shot, compared to parents who had difficulty accessing medical care for their children (54.7%) (Figure 6).
- A higher percentage (68.6%) of parents whose children had a regular source of care thought it was normal for a child to experience mild reactions after getting a shot than parents of children with no regular source of care (50.0%) (Figure 6).

School Attendance OK for Unimmunized

This question measured parental opinion about whether children should be allowed to attend school if they are not immunized. Overall, 21.2% thought parents should be allowed to send their children to school without immunizations, 74.1% thought parents should not be allowed to send their children to school without immunizations, and 4.7% reported they did not know (Table 1).

- Among different racial and ethnic groups, more white parents (26.8%) believed that children should be allowed to attend school without immunizations, in contrast to 23.7% of Asian, 21.7% of African American, and 18.2% of Latino parents.
- As educational level and household income increased, the percentage of parents who thought that unvaccinated children should be allowed to attend school increased (Figure 7).
- The percentage of parents who thought children should be allowed to attend school without immunizations varied by SPA, with the highest percentage found among parents living in the West SPA (30.8%) and the lowest in the South SPA (15.4%).
- A higher percentage of parents who reported speaking primarily English at home (25.4%) thought children should be allowed to attend school without immunizations, compared

FIGURE 7 Percent of Children (0-17 years old) Whose Parents Think Children Should be Allowed to Attend School Even If They Are Not Immunized, by Parental Education, LACHS 2011



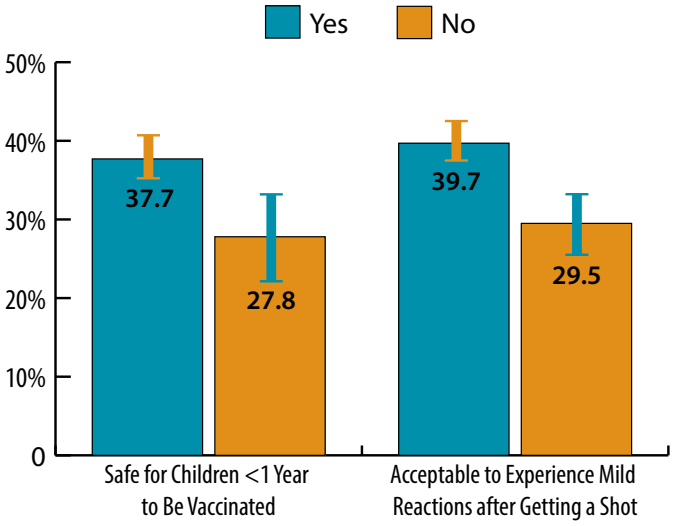
to 15.1% of parents who reported speaking primarily Spanish at home. Data for parents who reported speaking mostly Asian languages, other European languages, and Middle Eastern Languages at home were not stable.*

Parental Concerns about Immunization and H1N1 Flu Vaccine Use

H1N1 was the primary influenza strain identified during the flu season prior to the beginning of data collection for the 2011 LACHS. There were additional media campaigns and special temporary clinics opened throughout LA County in order to promote and encourage residents to be vaccinated. To track the vaccination rate, parents were asked to report whether their child had been vaccinated for H1N1 influenza (received at least 1 dose) since October, 2009. Over a third (36.2%) of children had received at least 1 dose of H1N1 flu vaccine. Parental concerns about vaccine safety and side effects were associated with H1N1 flu vaccine use.

- Nearly 38% (37.7%) of children whose parents thought it was safe for an infant to be immunized had been vaccinated for H1N1 flu, while only 27.8% of children whose parents deemed it unsafe to immunize an infant had been vaccinated (Figure 8).
- Similarly, 39.7% of children whose parents thought it was normal or acceptable for a child to experience mild reactions after getting a shot had been vaccinated for H1N1 flu, in comparison to 29.5% of children whose parents did not think or accept that mild reactions were normal (Figure 8).

FIGURE 8 Percent of Children (0-17 years old) Who Had Been Vaccinated for H1N1 Flu (at least one dose) Since October, 2009, by Parental Concerns about Immunization, LACHS 2011



The estimate is statistically unstable (relative standard error ≥23%) and therefore may not be appropriate to use for planning or policy purposes.

Discussion

Maintaining high immunization coverage is essential for preventing vaccine-preventable diseases. In selected communities across the US, including in California and LA County, childhood immunization rates have dropped below the level that maintains herd immunity and prevents outbreaks. Parental knowledge about and attitudes toward vaccination partially underlie this concerning public health challenge.

About 13% of parents in LA County believed it was not safe to immunize infants, and about 6% did not know if it was safe. About 30% of parents did not believe that it was normal for children to experience mild side effects after immunization. LACHS data reveal disparities in knowledge about childhood immunization across different populations of parents in the County. Parents' social, economic, and cultural backgrounds, and their access to medical care for their children, impact their understanding of and concerns about routine childhood vaccination.

Parental knowledge and attitudes about vaccinations varied by primary language spoken at home. For example, fewer parents who spoke Asian languages and European languages other than English and Spanish thought it was safe to vaccinate a child under 1 year of age, while fewer parents who spoke Spanish believed it was acceptable for a child to experience mild side effects after immunization. Further, parents who spoke mostly English at home were more likely than those who spoke mostly Spanish at home to report that children should be allowed to attend school even if they are not immunized. These findings suggest different cultural groups have different concerns about immunization. A more targeted, culturally-tailored approach is warranted to educate parents and address concerns among linguistically diverse groups of parents.

Notably, parents who reported easier access to medical care for their children also reported less concern about vaccination safety and mild reactions after immunization, possibly because these parents were more likely to interact with pediatricians or other health care providers. Physicians are the most influential source of immunization information for parents.[12] Parents who have contact and communication with physicians, especially pediatricians, are more likely to obtain correct knowledge about immunization.

A higher percentage of white, highly-educated, and high-income parents understood that mild reactions to vaccinations are normal in children, compared to their counterparts. However, a higher percentage of these parents also thought that children should be allowed to attend school without immunizations, compared to parents of other races and ethnicities and of lower social and economic status.

Parental knowledge and concerns are likely to impact the use of PBEs. Geographically, the highest percentage of parents who shared the opinion that children should be allowed to attend school without immunizations was found in the West SPA, the most affluent SPA of the County. Consistently, more parents in the West SPA have opted out of immunizing their children using PBEs than in the rest of the County. The factors that lead better educated, wealthier parents to more readily reject vaccinations warrant more research.

The Los Angeles County Department of Public Health calls upon all health care professionals, school administrators/staff, and other stakeholders to act swiftly to improve parental education and understanding about vaccines and their safety, as well as to work together to ensure optimal vaccine coverage rates to protect all County residents.

12. Gellin BG, Maibach EW, Marcuse EK. Do parents understand immunizations? A national telephone survey. Pediatrics. 2000;106(5):1097-102.

Recommended Actions

Parents and Guardians

- Start vaccines for your children on-time, at birth, and stay on schedule.
- Follow the Center for Disease Control and Prevention's (CDC's) immunization schedule (**www.cdc.gov/vaccines/parents/downloads/parent-ver-sch-0-6yrs.pdf**), which is evidence-based and protects children when they are more likely to become infected or have complications from VPDs. Skipping or delaying vaccines leaves your child at risk for serious diseases.
- Talk to your child's health care provider about your questions about vaccines, such as whether it is safe for newborns to get vaccinated, what types of side effects to expect, and why doctors recommend getting more than one vaccine at the same visit.
- Share why you think vaccines are important. Tell other parents, post a social media message, or share your story at **whyichoose.org** or **shotbyshot.org**.

Health Care Providers

- Follow the CDC's immunization schedule, which is evidence-based.
- Strongly recommend vaccines and help parents make an informed choice to vaccinate:
  - Educate parents that vaccine side effects, such as a mild fever or rash, are normal and less serious than the diseases that vaccines prevent.
  - Respectfully listen to and respond to parents' concerns about vaccine safety.
  - Provide educational materials that address common vaccine safety and side effects questions (**www.ph.lacounty.gov/ip/providers/VaccineSafety.htm**).
  - Share stories to help parents understand the importance of vaccines. Speak about a VPD case that you treated or refer to the **shotbyshot.org** site for true stories of families impacted by VPDs.
  - Use evidence-based strategies to improve immunization rates, such as the California Immunization Registry (**www.cairweb.org**).
  - Remind parents when vaccines are due and contact patients who are missing doses.

Schools and Child Care Centers

- Use the California Immunization Registry (**www.cairweb.org**) to view and print students' school immunization records (blue cards).
- Adhere to the California Department of Publc Health's (CDPH's) conditional entrance (CE) guidelines and follow-up to ensure that CE students receive missing vaccines or are excluded from attendance, if needed.
- Use educational materials (**www.ph.lacounty.gov/ip/providers/VaccineSafety.htm**) and personal stories (**www.shotbyshot.org**) to educate vaccine-hesitant parents about the benefits of vaccines and the risks of skipping or delaying doses.
- Submit fall assessment data on time to the CDPH.
- Publicize immunization coverage levels in your child care center or school using interactive maps (**www.shotsforschool.org**).

Policy Makers

- Publicize immunization coverage levels in your district, using interactive maps (**www.shotsforschool.org**).
- Participate in immunization outreach campaigns.
- Invite credible vaccine experts from the local health department, hospitals, clinics, and universities to speak at town halls or forums.
- Promote vaccines and address vaccine safety concerns in constituent newsletters.
- Support strong child care and school immunization mandates and policies that can improve immunization awareness and access.

Efforts to Improve Immunization Coverage Levels in Los Angeles County

The Los Angeles County Department of Public Health (LAC-DPH) partners with stakeholders to improve childhood immunization coverage levels and prevent vaccine-preventable diseases. The following are examples of recent activities.

Ensure that Immunization Services are Accessible to all People in Los Angeles County

- Provide influenza vaccinations at no-charge at over 150 community flu vaccination outreach events and in clinics held during the 2014-2015 flu season.
- Promote awareness of sources for no-cost and low-cost immunizations through press releases, social media messages, and a partnership with the LA County 211 Help Line (**www.211la.org**).
- Partner with community health centers and other organizations, including mobile health providers and schools, to offer vaccinations in convenient community sites.
- Provide all routinely recommended pediatric vaccines at a minimal cost to qualified children in public health centers throughout LA County including no-cost and low-cost vaccinations for uninsured and lower income children.

Ensure that Residents and Stakeholders have Accurate and Timely Information

- Disseminate information and messages to increase awareness during national and statewide immunization campaigns in the form of press releases, social media messages, outreach events, web content, and media interviews.
- Increase confidence in vaccines by disseminating vaccine safety materials, launching a vaccine safety webpage, promoting awareness through social media and media messages, and integrating vaccine safety information into provider training programs.
- Conduct a study of school immunization practices that may be associated with PBEs and Conditional Entrants levels. The School Support Team is currently reviewing findings, which will be used to tailor school trainings and resources.

Facilitate the Delivery of Evidence-based Immunization Services

- Disseminate provider alerts, post web content, distribute provider educational materials, publish articles in provider publications, and provide face-to-face training and consultation for clinicians and support staff.
- Use a CDC audit tool to identify storage and handling processes and issues in medical offices and clinics.
- Conduct surveys regarding physician and medical assistant knowledge, attitudes, beliefs, and practices regarding immunizations. Results are used to enhance provider technical support and training.

on the web

LOCAL

The **Los Angeles County Department of Public Health's Immunization Program** works to improve immunization coverage levels and prevent VPDs among LA County residents: **www.publichealth.lacounty.gov/ip**. Its website has a list of clinics that provide no- to low-cost immunizations to youth 18 years of age and under: **www.ph.lacounty.gov/ip/IZclinics/clinics.htm**.

The **Immunization Coalition of LA County (ICLAC)** is a community-based, public and private sector partnership of immunization stakeholders from schools, community health clinics, hospitals, health plans, local and state health department programs, and vaccine manufacturers. Their aim is to eliminate VPDs across the lifespan throughout LA County.
www.publichealth.lacounty.gov/ip/ICLAC

The **Immunize LA Families Coalition** is a volunteer-led public-private partnership that aims to improve immunization coverage and eliminate VPD disparities across the lifespan by implementing tailored strategies in South Los Angeles.
www.izlaf.org

STATE

The **Immunization Branch of the California Department of Public Health** provides leadership and support to public and private sector efforts to protect the population against vaccine-preventable diseases.
www.cdph.ca.gov/programs/immunize

The **California Immunization Coalition** is a non-profit, public-private partnership dedicated to achieving and maintaining full immunization protection for all Californians to promote health and prevent serious illness.
www.immunizeca.org

NATIONAL

The mission of the **Centers for Disease Control and Prevention's (CDC's) National Center for Immunization and Respiratory Diseases (NCIRD)** is the prevention of disease, disability, and death through immunization and by control of respiratory and related diseases.
www.cdc.gov/ncird

The **American Academy of Pediatrics** and its member pediatricians dedicate their efforts and resources to the health, safety and well-being of infants, children, adolescents and young adults.
www2.aap.org/immunization

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2012 Model Practice Award
Los Angeles County Health Survey

In this issue:

WHAT DO PARENTS THINK? KNOWLEDGE AND ATTITUDES ABOUT IMMUNIZATION

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For additional information about the LA County Health Survey, visit: www.publichealth.lacounty.gov/ha

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The Los Angeles County Health Survey is a periodic, population-based telephone survey that collects information on sociodemographic characteristics, health status, health behaviors, and access to health services among adults and children in the County. The 2011 survey collected information on a random sample of 8,036 adults and 6,013 children. The survey was conducted for the Los Angeles County Department of Public Health by Abt SRBI Inc., and was supported by grants from First 5 LA, the Los Angeles County Department of Mental Health, and Department of Public Health programs including the Tobacco Control and Prevention Program, the Emergency Preparedness and Response Program, Substance Abuse Prevention and Control, and Environmental Health.