



# The Rising Trend of Unvaccinated Students: Los Angeles County Schools 2011-2012

ICLAC General Session Meeting  
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# The Rising Trend of Unvaccinated Students: Los Angeles County Schools, 2011-2012





# Presentation Objectives

- To present Personal Beliefs Exemption (PBE) levels in Los Angeles County (LAC) preschools, schools with kindergarten, and schools with 7<sup>th</sup>-12<sup>th</sup> grades
- To present Conditional Entrants (CE) data in LAC preschools and schools with kindergarten
- To illustrate how PBE and CE levels differ by geographic location (SPA) and school type (public/private)
- To identify potential strategies to reduce the percentage of PBE's and CE's at LAC public and private schools

# Learning Objectives

- Name 2 factors that may be associated with PBE levels
- Name 2 factors that may be associated with CE levels
- Name 2 strategies that may assist in reducing PBE levels in LAC preschools, schools with kindergarten, and schools with 7<sup>th</sup>-12<sup>th</sup> grade
- Name 2 strategies that may assist in reducing CE levels among LAC preschools and schools with kindergarten

# Why are these data important?

- The percentage of PBE's and CE's has been steadily increasing in LAC since 2002. Thousands of unvaccinated and under-vaccinated children can lead to:
  - Increased number of cases of vaccine preventable diseases (VPDs)
  - Students being excluded due to under-vaccination
  - Outbreaks in schools and communities (e.g., 2010 California pertussis epidemic)
  - Increased costs associated with case investigation, excluding children from school, and diagnosis and treatment
- These data can be used to:
  - Identify areas at increased risk for disease outbreaks due to high PBE and CE levels
  - Target educational and immunization service delivery interventions

# Background and Methodology

## Annual Fall Assessment

- The data source for this analysis is the 2011-2012 California Department of Public Health Immunization Branch Fall immunization (IZ) assessment of preschools, schools with kindergarten, and schools with 7<sup>th</sup>-12<sup>th</sup> grade
- All schools are required to self-report online:
  - Enrollment numbers
  - Vaccination status of req'd vaccines
  - Number of PBE's, CE's, and Medical Exemptions (ME)
  - Missing vaccines related to CE status



# Methodology (con't)

## Inclusion Criteria

- Licensed preschool and childcare enrollees (24-59 months of age)
- Kindergarten enrollees of all ages (57-69 months of age for ungraded classes)
- 7<sup>th</sup> -12<sup>th</sup> grade enrollees (<18 years of age)

## Exclusion Criteria

- Schools from Long Beach and Pasadena
- Schools with <10 enrollees in the grade level
- Home day care, day care nurseries, and developmental centers
- Schools that did not submit an assessment by the deadline

## PBE and CE Level Calculations

- The sum total of PBE divided by total number of enrollees = average PBE level
- The sum total of CE divided by total number of enrollees = average CE level





# California School Entry Vaccination Requirements, 2011-2012

Grade Level	Polio	Diphtheria, Tetanus, & Pertussis (DTaP/DTP)	Tetanus, Diphtheria, Acellular Pertussis (Tdap)	Measles, Mumps, Rubella (MMR)	Hepatitis B (Hep B)	<i>Haemophilus Influenzae</i> Type B (Hib)	Varicella
Preschool	3 doses	4 doses	Not eligible	1 dose	3 doses	1 dose	1 dose
Kindergarten	4 doses	5 doses	Not eligible	2 doses	3 doses	Not required	1 dose
7 <sup>th</sup> -12 <sup>th</sup> Grade	Not required	Not required	1 dose	Not required	Not required	Not required	Not required

**Source:** CA Health and Safety Code, Div. 105, Part 2, Chapter 1, Communicable Disease Prevention and Control, sections 120325-120380; California Code of Regulations, Title 17, Div. 1, Chapter 4, Subchapter 8, Sections 6000-6075



# Definitions of Unvaccinated Students

- **Personal Beliefs Exemption (PBE)**

- A PBE is a vaccine exemption filed on behalf of a child missing one or more required vaccinations due to the parent or guardian's personal and/or philosophical beliefs.

- **Conditional Entrant (CE)**

- A CE refers to a student that is lacking one or more vaccine doses that are not currently due and admitted on condition that they receive the remaining doses when they become due.
- CE provisions are also offered for homeless students.

- **Medical Exemption (ME)**

- Enrollees with a physical or medical condition that is contraindicated to vaccinations can be allowed to enter school without meeting the school IZ requirements. Requires a signed medical affidavit from a licensed physician.



# LAC Preschool, Kindergarten, and 7<sup>th</sup>-12<sup>th</sup> Grade School Characteristics, 2011-2012

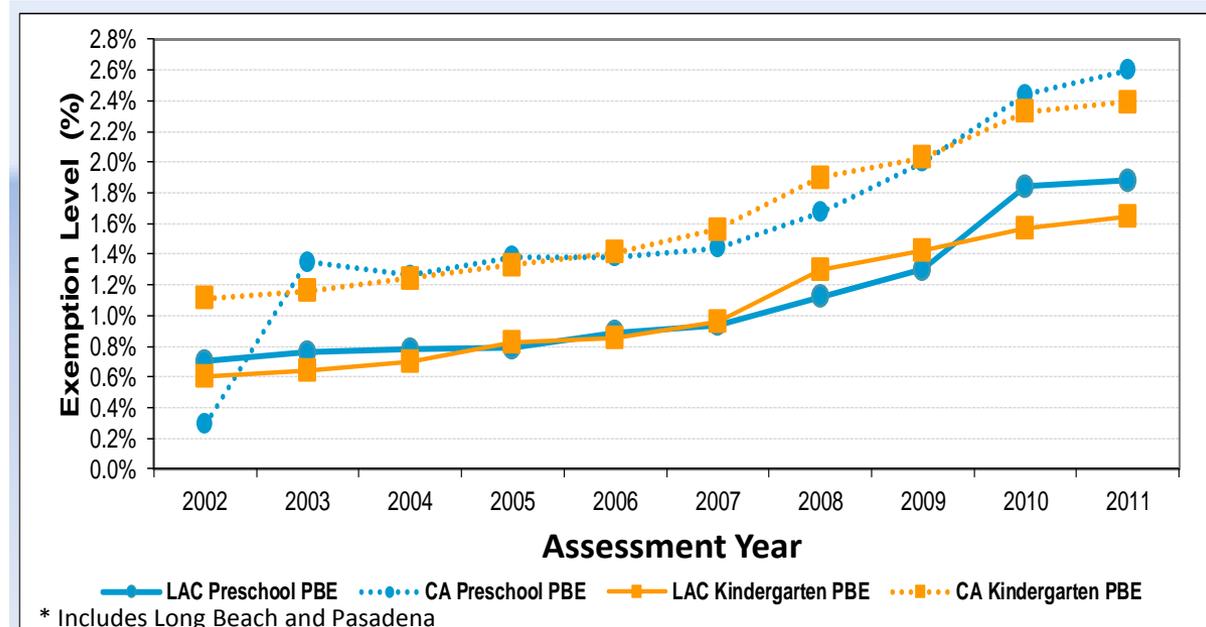
Grade Level	Enrolled Students	Schools	Private	Public	Head Start	School Districts
Preschool	129,001	2,216	1,497 (68%)	320 (14%)	399 (18%)	N/A
Kindergarten	121,772	1,666	470 (28%)	1,196 (72%)	N/A	80
7 <sup>th</sup> -12 <sup>th</sup> Grade	759,843	1,341	484 (36%)	857 (64%)	N/A	84

Only includes schools that submitted assessment forms, with 10 or more enrollees in the grade level. Excludes schools from Long Beach and Pasadena because they are outside of the Los Angeles County Public Health Department's jurisdiction.

# Rising PBE Levels in California and Los Angeles County, 2002-2011

- Between 2002 – 2011, PBE levels among Los Angeles County preschool and schools with kindergarten increased by over 150%

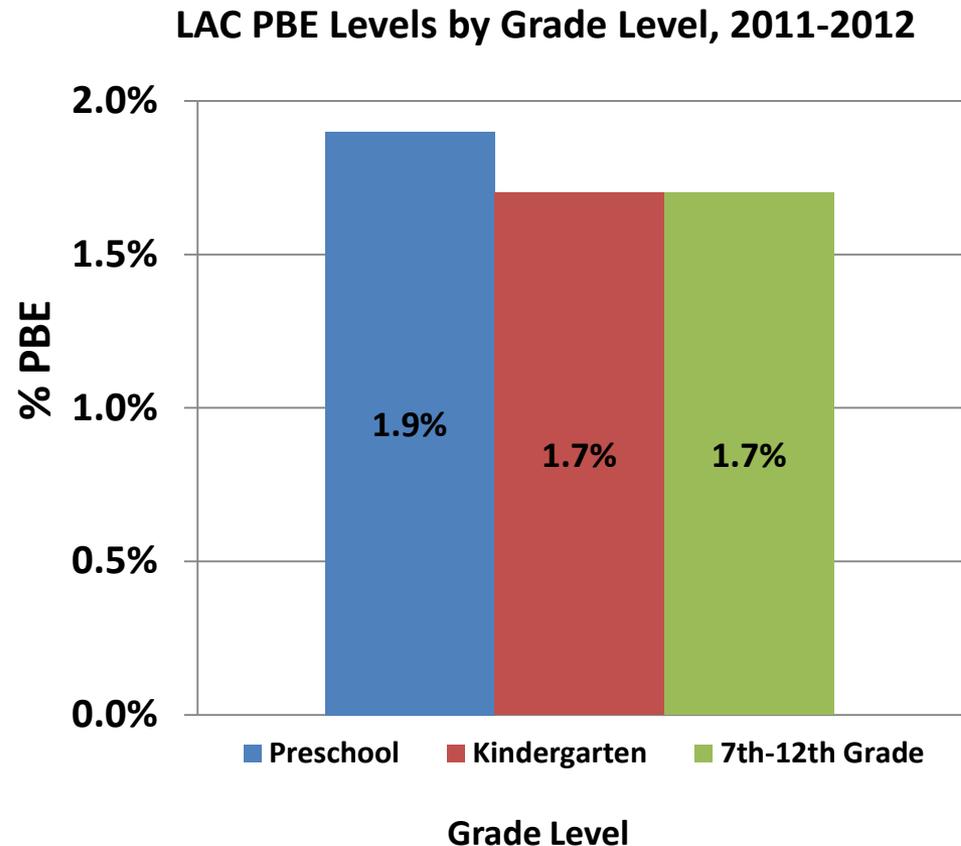
CA and LAC Preschool and Kindergarten PBE Levels, 2002-2011



Source: California Department of Public Health, School Immunization Assessment, 2002-2011.

# Overview: Los Angeles County PBE Levels

- In 2011-2012 school year, the average PBE levels for LAC:
  - Preschools were 1.9%
  - Schools with kindergarten were 1.7%
  - Schools with 7<sup>th</sup>-12<sup>th</sup> grades were 1.7%
- From the 2011-2012 school sample data, **17,222** preschool, kindergarten, and 7<sup>th</sup>-12<sup>th</sup> graders had a PBE on record for at least one vaccination due to a PBE



# PBE Levels by School Type 2011-2012

**Private schools had the highest PBE levels.**

## Private Preschools (2.8%)

- Had over 5 times higher PBE levels than public preschools (0.5%)
- Had 14 times the PBE levels of Head Start (0.2%)
- Range: 0% (1,000 schools) - 87% (1 school)
- 149 with PBE levels  $\geq 7.7\%$  ( $\geq 90^{\text{th}}$  percentile)

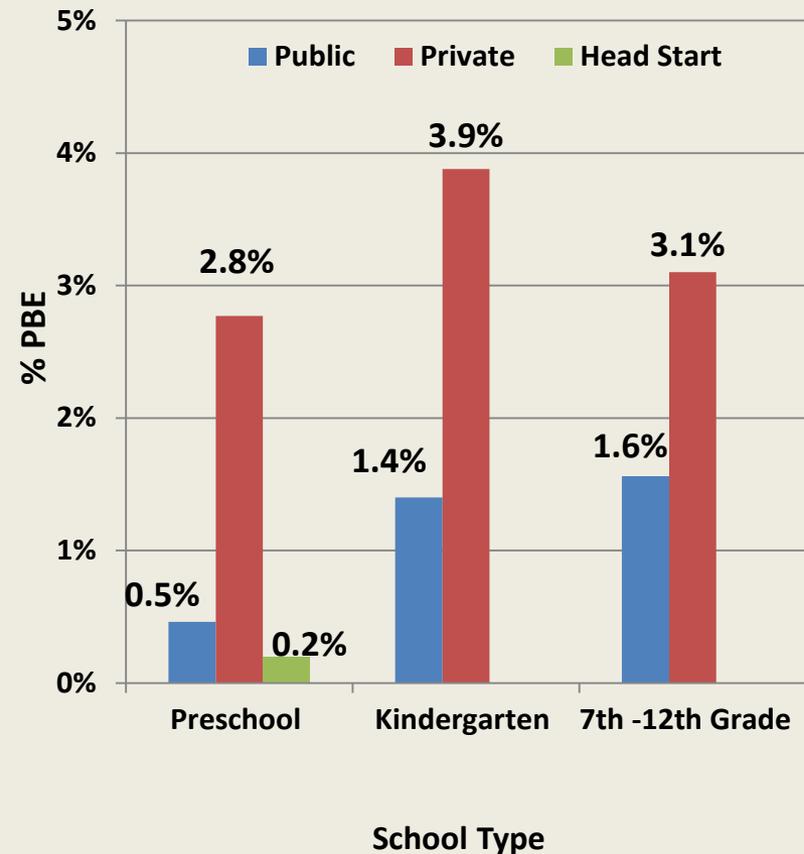
## Private Kindergarten (3.9%)

- Had over two times the PBE level of public schools (1.4%)
- Range: 0% (322 schools) - 84% (1 school)
- 49 with kindergarten had PBE levels  $\geq 11.1\%$  ( $\geq 90^{\text{th}}$  percentile)

## Private 7<sup>th</sup>-12<sup>th</sup> Grades (3.1%)

- Had about 2 times the PBE levels of public schools (1.6%)
- Range: 0% (224 schools) – 100% (2 schools)
- 50 with 7<sup>th</sup>-12<sup>th</sup> grades had PBE levels  $\geq 15.4\%$  ( $\geq 90^{\text{th}}$  PBE percentile)

LAC PBE Levels by School Type, 2011-2012



# LAC PBE Levels by Geographic Location

## Preschools

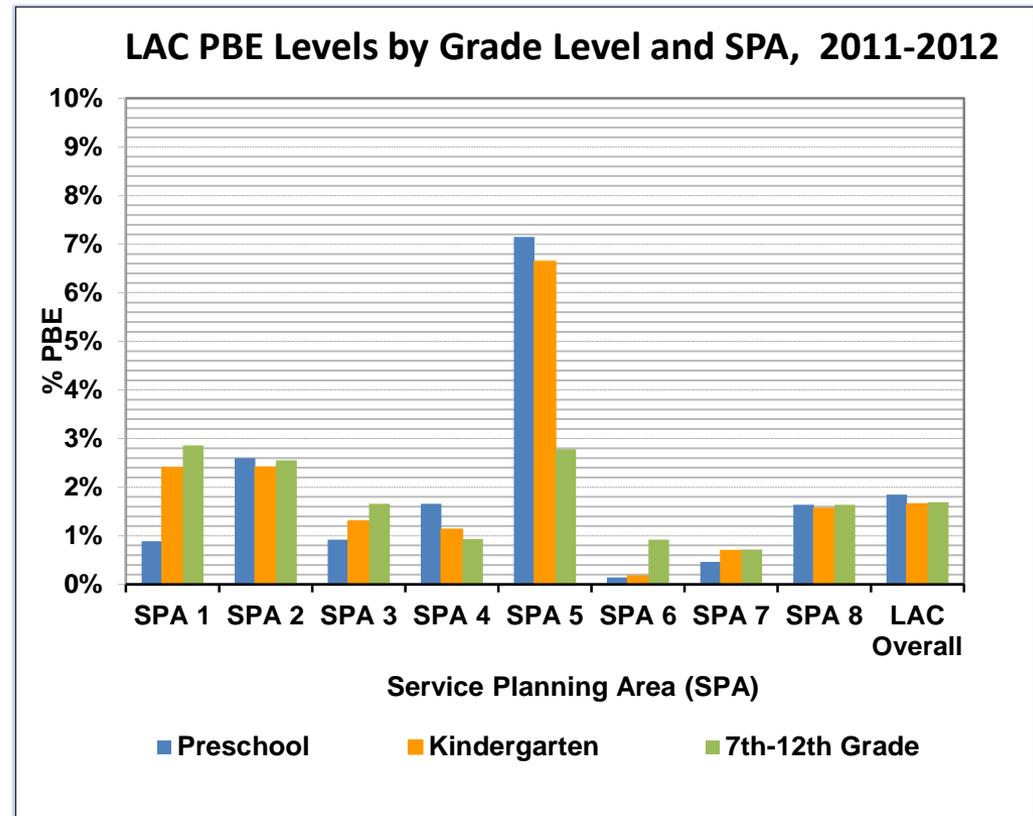
- SPA 5 had the highest PBE levels (7.2%)
- SPA 6 had the lowest PBE levels (0.1%)

## Kindergarten

- SPA 5 had the highest PBE levels (6.6%)
- SPA 6 had the lowest PBE levels (0.2%)

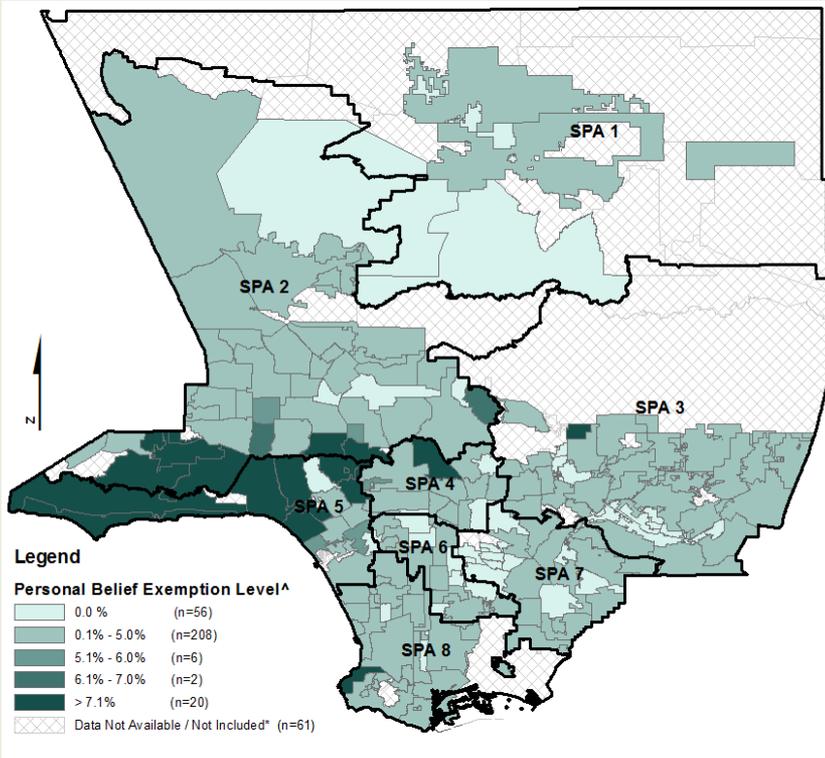
## 7<sup>th</sup>-12<sup>th</sup> Grades

- SPAs 1, 2, and 5 had the highest PBE levels (2.9%, 2.6%, and 2.8%)
- SPA 7 had the lowest PBE levels (0.7%)

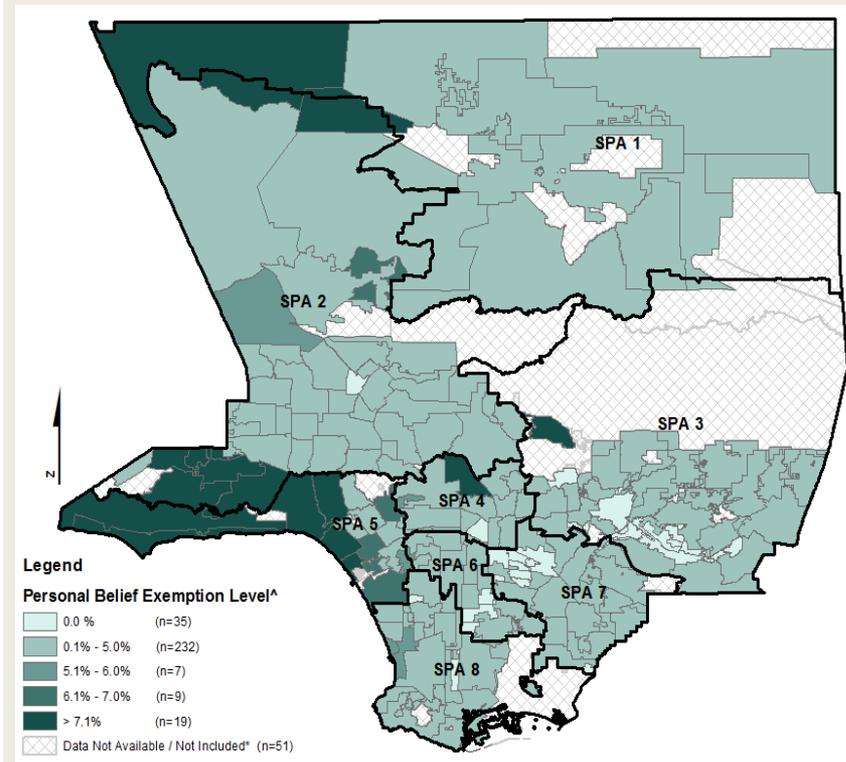


# Concentration of PBE Levels by SPA, 2011-2012

## LAC Preschool PBE Levels by SPA, 2011-2012



## LAC Kindergarten PBE Levels by SPA, 2011-2012



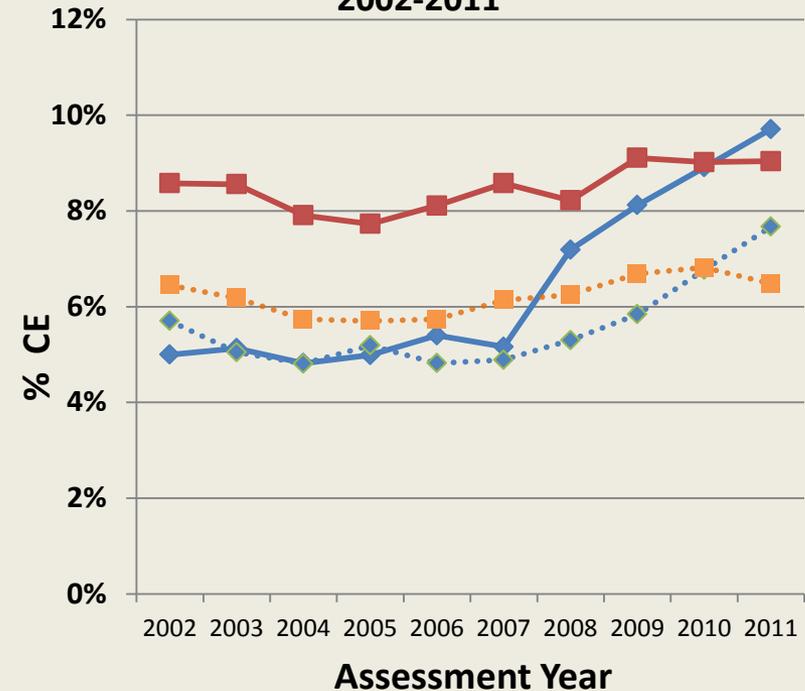
# Conditional Entrants



# Rising CE Levels in California and Los Angeles County, 2002-2011

- Between 2002-2011, conditional entrant levels among LAC **preschools** and schools with **kindergarten** enrollees have increased as well
  - **Preschool:** CE levels increased by approximately 90%
  - **Kindergarten:** CE levels increased by approximately 5%
- CE is not applicable for 7<sup>th</sup>-12 grades

CA and LAC Preschool and Kindergarten CE Levels, 2002-2011

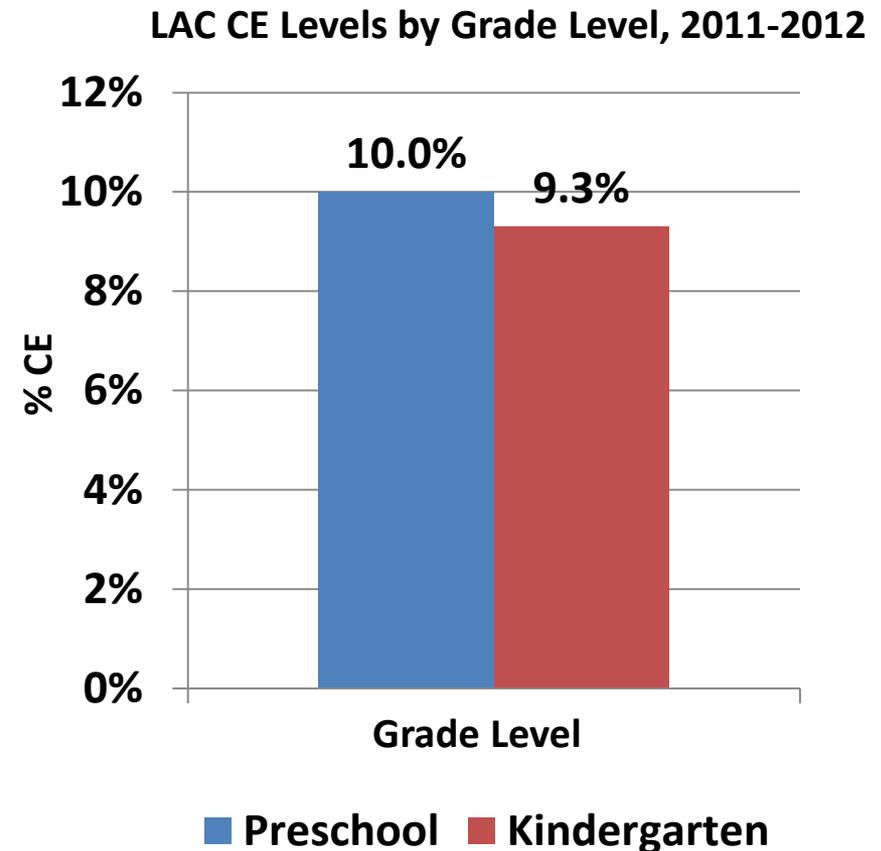


◆ LAC Preschool CE      ■ LAC Kindergarten CE  
◆ CA Preschool CE      ■ CA Kindergarten CE

\* Includes Long Beach and Pasadena

# Overview: Los Angeles County CE Levels

- In 2011-2012 school year, the overall CE levels for LAC:
  - Preschools were 10%
  - Schools with kindergarten were 9.3%
- In the 2011-2012 school year, **12,841** enrollees of preschool and **11,332** kindergarten enrollees represent a total of **24,173** beginning the school year missing one or more required vaccinations due to a CE



# CE Level by School Type 2011-2012

## Public schools had higher CE Levels than private schools

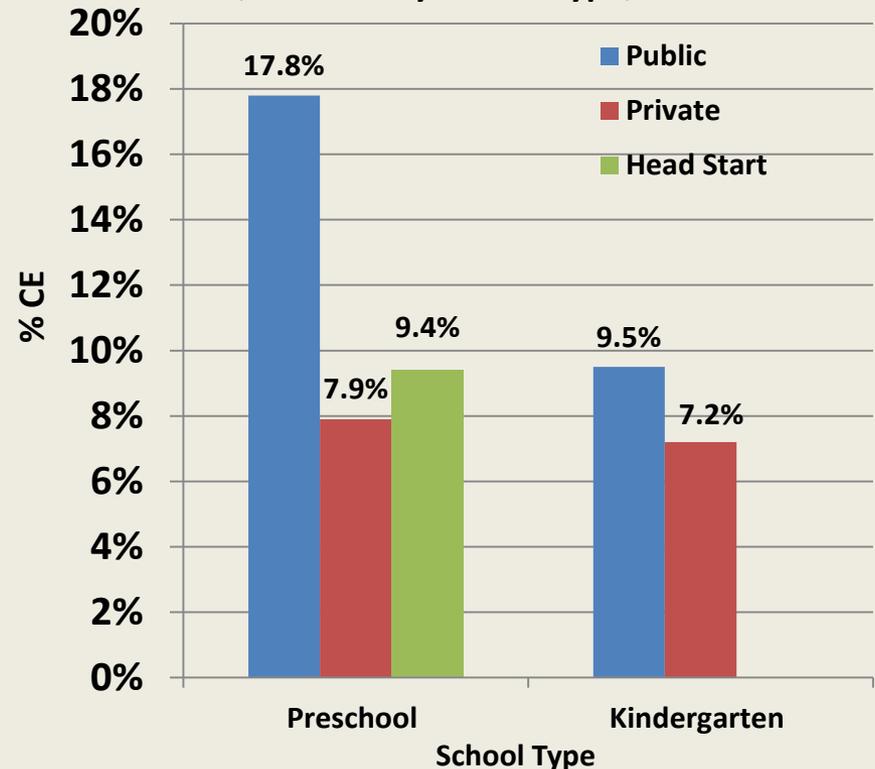
### Public Preschools (17.8%)

- Had 2 times higher CE levels than private preschools (7.9%)
- Higher CE levels than Head Start schools (9.4%)
- Range: 0% (110 schools) - 86% (1 school)
- 32 with CE levels  $\geq 45.3\%$  ( $\geq 90^{\text{th}}$  percentile)

### Public Kindergarten Schools (9.5%)

- Had higher CE levels than private schools with kindergarten enrollees (7.2%)
- Range: 0% (275 schools) - 98% (1 school)
- 120 with CE  $\geq 26.8\%$  ( $\geq 90^{\text{th}}$  percentile)

LAC, CE Level by School Type, 2011-2012



# Conditional Entrants Levels by Geographic Location, 2011-12

Overall, the LAC CE levels were 10% for preschools and 9.3% for kindergarten

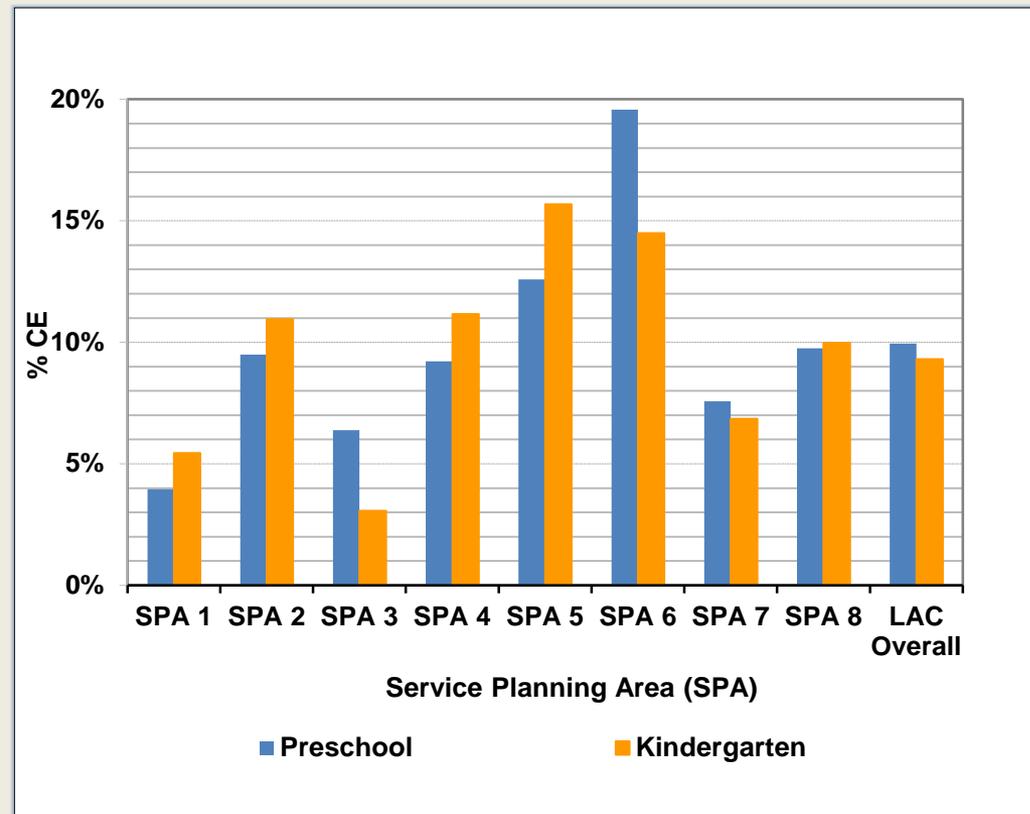
- **Preschool CE levels by SPA (high to low)**

- Highest: SPA 6 (19.6%)
- Lowest: SPA 1 (4%)

- **Kindergarten CE levels by SPA (high to low)**

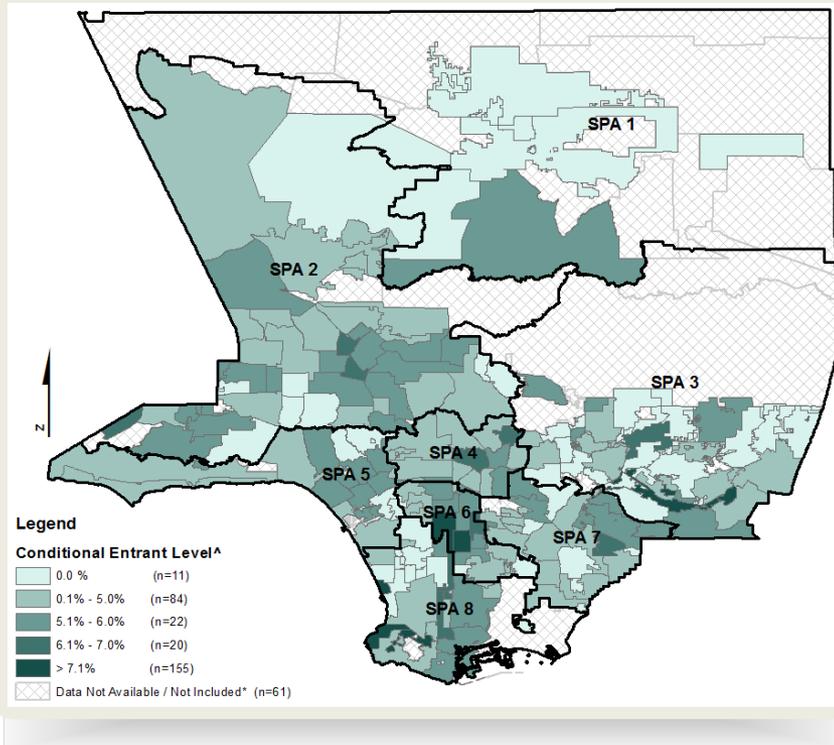
- Highest: SPA 5 (15.7%)
- Lowest: SPA 3 (3.1%)

LAC CE Levels by Grade Level and SPA, 2011-2012

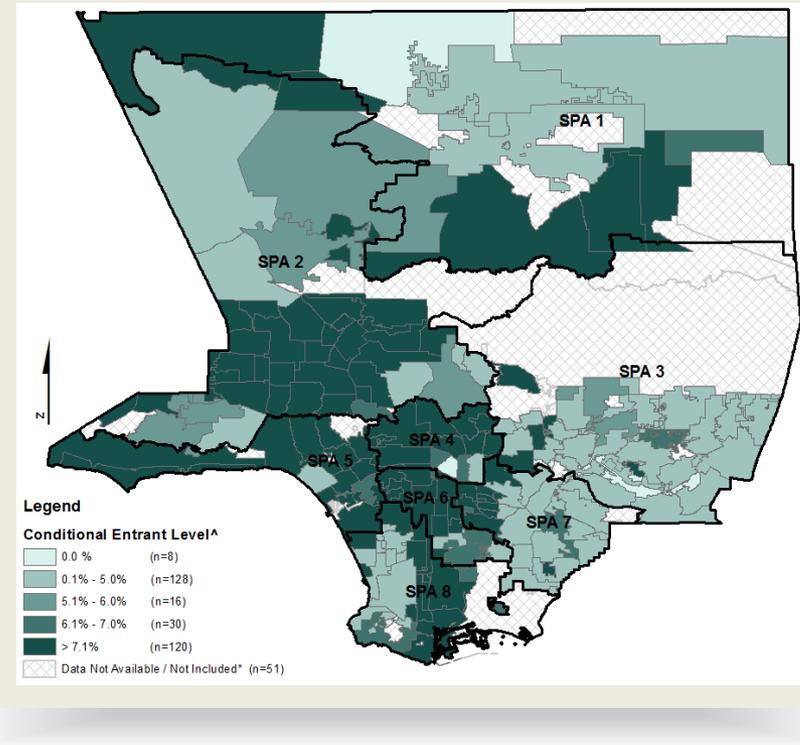


# Concentration of CE Levels by SPA, 2011-2012

## LAC Preschool CE Levels by SPA, 2011-2012



## LAC Kindergarten CE Levels by SPA, 2011-2012



# CE Levels by School Enrollment Size

## Kindergarten

- Schools with small enrollment size (e.g., 10-52 enrollees) had the highest CE level (17%)
- Schools with large enrollment sizes (e.g., 142-261 enrollees) had the lowest CE levels (10.3%)



# Summary PBE Levels

- Overall, PBE levels for LAC preschools and schools with kindergarten enrollees have been steadily climbing since 2002-2011.
- For schools with 7<sup>th</sup>-12<sup>th</sup> grade enrollees, Tdap was required for school entry in the 2011-2012 school year.
  - Prior to 2011, Tdap was not required for school entry, so trend data are not available for this age range.
  - The PBE level for the 2011-2012 school year for schools with 7<sup>th</sup>-12<sup>th</sup> grades was similar to those found in preschools and schools with kindergarten.

# Summary PBE Levels (Con't)

## School Type

- PBE levels appear to be higher in private schools (irrespective of grade level) than in public schools.

## Geographic Location

- High PBE levels appear to concentrate geographically in certain SPAs (e.g., highest in SPAs 1, 2, and 5)

# Summary CE levels

- CE levels for LAC preschools and schools with kindergarten enrollees have increased over a 10 year period (2002-2011)

## School Type

- CE levels appear higher in public schools than in private schools for preschools and kindergarten

## Geographic Location

- CE levels appear to concentrate geographically in certain SPAs (e.g., SPA 6 reported the highest CE levels for public preschools and schools with kindergarten)

## School Size

- Among schools with kindergarten, small school size appears to be a factor for high CE levels.



# Limitations and Suggestions for Future Research

- The scope of this analysis is limited to only schools submitting an immunization assessment form that are located within LA County's health jurisdiction.
  - Long Beach and Pasadena were excluded as these cities are outside the LAC's health jurisdiction
- In 2011-2012, information was not collected regarding the specific vaccines for which a PBE was filed
- The scope of this analysis is limited to exploring factors related to PBE and CE levels by geographic location and school type.
  - Definitive conclusions as to the cause of higher levels cannot be reached; further research is recommended.

# Call-to-Action

## Here's how you can help:

- **Immunization Providers**

- Join the CA Immunization Registry (CAIR)
- Educate vaccine hesitant parents

- **School Administrators and Health Staff**

- Join the CA Immunization Registry (CAIR)
- Submit Fall Immunization Assessment forms on time
- Educate vaccine hesitant parents with the most up-to-date vaccine-risk benefit communication

- **Parents/Guardians**

- Learn more about the importance of immunizations and the reasons why VPD's can be life-threatening

- **Elected Officials**

- Support policies that enhance schools' capacity to promote vaccinations
- Promote policies that improve access to immunizations

- **Media**

- Publicize national (NIIW/NAIM) and state (Preteen Vaccine Week) immunization awareness campaigns
- Report fact-based and positive messages regarding vaccines and their benefits

- **State and Local Health Depts.**

- Continue technical assistance to schools to help them educate parents about vaccines
- Plan and implement targeted interventions in the geographical areas with the highest PBE levels

# Recommendations

- The findings from this report and future assessment reports can be shared with school administrators, school health staff, and physicians (e.g., especially in geographic locations with high PBE levels)
- Utilize these data to create educational and immunization service delivery interventions, such as:
  - In-service trainings with health providers on vaccine risk-benefit communication with vaccine hesitant parents
  - Conduct focus groups with parents with children in private schools in SPA 5 to better understand vaccine safety issues
  - Present these PBE and CE data at LAC school administrator and health program manager meetings
- Ensure the availability and access to vaccine risk-benefit resources and materials to share with parents by school staff.

# Questions





# Acknowledgement and Special Thanks

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