

**2015-2016 CONDITIONAL ENTRANT INTERVENTION PROJECT**  
CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, IMMUNIZATION BRANCH

**Introduction**

Each autumn, all schools with kindergartens in California are required to report student compliance with California School Immunization Laws (California Health and safety Code Sections 120335-120375) to the California Department of Public Health (CDPH). Based on their immunization status, students are classified by school staff into the following categories:

- All Required Immunizations
- Conditional Entrants
- Permanent Medical Exemptions
- Personal Belief Exemptions

The classification of conditional entrant is assigned to children who are up-to-date (i.e., not currently due for any immunizations), but have not received all required immunization doses for age or grade. For kindergartners, this includes children needing additional doses in a series and children with temporary medical exemptions.

Results from the [2014-2015](#) assessment revealed that 6.9% (36,931/535,234) of kindergartners were admitted conditionally. Further analysis suggests that fewer than 10% of children reported to be conditional entrants truly fulfilled criteria for conditional entrance based on the [Conditional Admission Immunization Schedule](#) (CDPH, unpublished data). The majority of children reported to be conditional entrants should have been excluded from school.

In 2014-2015, 8.4% (647/7,741) of schools with kindergartens reported conditional admission rates of 25% or greater. Because this classification should apply only in limited circumstances, valid rates of 25% or greater are unlikely and suggest that a school is likely having difficulty interpreting and implementing school immunization law in regards to classification of conditional entrants. Such high rates also imply that a school's students are vulnerable to vaccine-preventable disease exposure and outbreaks.

Additionally, in 2015 the State Controller's Office (SCO) added an immunization component to the required financial and compliance audits of local educational agencies. As outlined in the Education Audit Appeals Panel (EAAP) [2015-2016 Guide for Annual Audits of K-12 Local Education Agencies](#), schools that reported conditional entrant rates greater than 25% in 2015-2016 will be subject to audit. Schools may lose average daily attendance (ADA) funding for any day a student is found to be in attendance inappropriately.

**Methods**

To improve compliance with immunization requirements, CDPH initiated the Conditional Entrant Intervention Project in which local health departments (LHDs) participated voluntarily. CDPH targeted eight jurisdictions (Los Angeles, Monterey, Orange, Sacramento, San Diego, San Francisco, Santa Clara,

and Ventura counties) to take part in the project based on their respective numbers and percentages of conditional entrant students, though all LHDs were encouraged to participate. CDPH asked LHDs to:

- Identify 2-10 schools with high numbers of conditional entrants.
- Offer support and technical assistance to school staff responsible for implementing school immunization law.
- Train school staff on school immunization law and implementation practices.
- Offer and make available resources to schools.

LHDs were also supplied with a spreadsheet of kindergartens with reported conditional admission rates over 25% in 2014-2015 to guide their selection of schools with which to perform interventions.

Concurrently, CDPH notified via email all public school principals, superintendents, school-based health centers, and county/district/school nurses of the addition of the immunization component to the EAAP audit guide. In the communications (2) sent, resources were attached and/or hyperlinked. CDPH also sent an email to school principals and superintendents of kindergartens with conditional admission rates greater than 25% in 2014-2015.

After the conclusion of the assessment reporting period, representatives from LHDs that participated in the project were interviewed over the phone to collect quantitative and qualitative data. Quantitative analysis of intervention and non-intervention schools was conducted with schools that submitted immunization assessment reports in 2014-2015 and 2015-2016. Non-intervention schools were defined as schools with kindergartens in the participating counties and the rest of the state where participating LHDs did not target as part of this project. Schools reporting conditional admission rates less than 5% in 2014-2015 were omitted from both intervention and non-intervention groups, as they had little room for improvement. The difference between intervention and non-intervention schools was calculated by subtracting reported conditional admission rates in 2014-2015 from those reported in 2015-2016 for each school, then finding the sample mean (Figure 1). CDPH objectively classified interventions for each school as low, medium, or high based on the criteria shown in Table 1. Subgroup analysis of intervention effectiveness by level of intervention was not possible given the small subgroup sizes of “low” (N = 14 schools) and “medium” (N = 12 schools).

**Table 1: Criteria for intervention level classification**

<b>Level of Intervention</b>	<b>Intervention Activity</b>	<b>Tailored Messaging</b>	<b>Time Spent</b>
Low	email, phone call, providing materials	No	< 30 min
Medium	email, phone call, providing materials	Yes	30-60 min
High	email, phone call, providing materials, face-to-face meeting	Yes	≥ 60 min

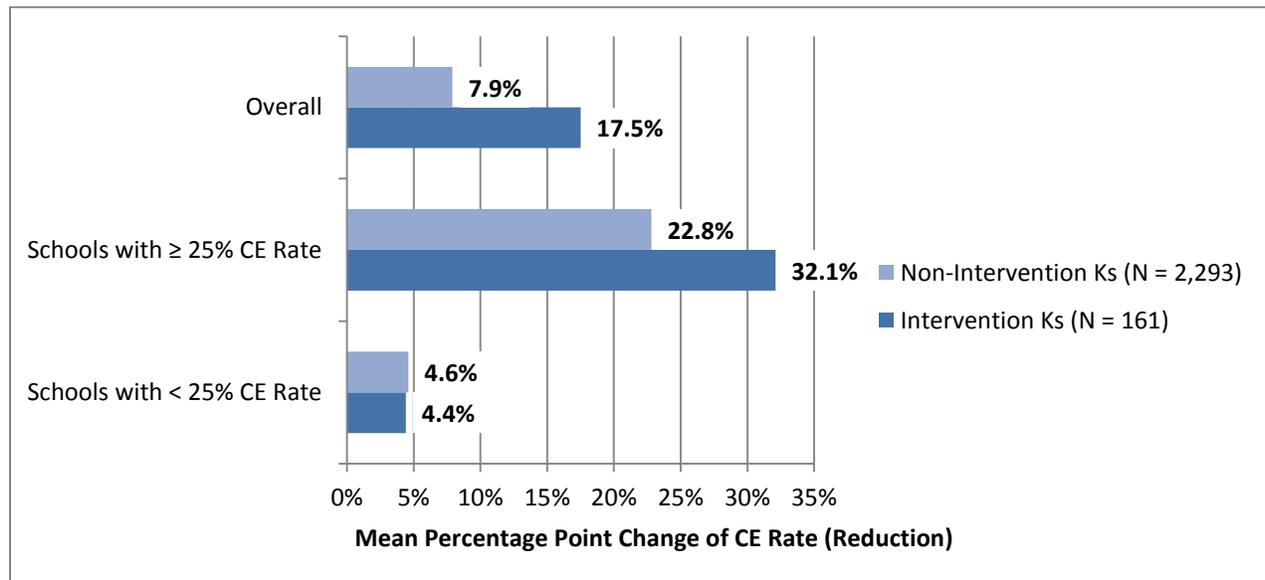
## Results

Of the eight jurisdictions targeted to participate in the Conditional Entrant Intervention Project, five LHDs participated and provided data for this evaluation (Orange, San Diego, San Francisco, Santa Clara, and Ventura counties), though Santa Clara’s interventions prioritized non-reporting schools rather than schools with high conditional admission rates. Other participating LHDs include: Alameda, Contra Costa, Fresno, Glenn (non-reporting schools only), Kern, Marin, Mendocino, Modoc, Santa Barbara, Santa Cruz, and Shasta counties. In total, 16 LHDs performed interventions with 161 schools. There were 2,293 non-intervention schools.

Compared to the 2014-2015 school year, the proportion of students reported to be conditional entrants in all California kindergartens decreased by 2.5 percentage points from 6.9% (36,931/535,234) to 4.4% (24,249/551,123) in 2015-2016.

A comparative analysis of conditional entrant rates from 2014-2015 and 2015-2016 in intervention and non-intervention schools (Figure 1) shows that the mean percentage point change of conditional admission rate was 17.5% in intervention schools and 7.9% in non-intervention schools ( $p = 0.0001$ ). Looking only at intervention and non-intervention schools that reported  $\geq 25\%$  conditional admission rates in 2014-2015, the mean percentage point change of conditional admission rate was 32.1% in intervention schools, which was significantly higher than in non-intervention schools (22.8%;  $p = 0.0011$ ). Lastly, intervention and non-intervention schools that reported  $< 25\%$  conditional admission rates in 2014-2015 had a mean percentage point change of conditional admission rate of 4.4% in intervention schools and 4.6% in non-intervention schools ( $p = 0.8734$ ).

**Figure 1: Mean Percentage Point Change of Conditional Entrant (CE) Rates in Intervention and Non-Intervention Schools with Kindergartens 2015-2016 vs. 2014-2015**



Most LHDs chose to target schools with reported conditional entrant rates of at least 10%. The types of interventions varied across LHDs and from school to school, depending on a particular school’s needs, but generally offered support, technical assistance, and training to school staff responsible for

implementing school immunization law. The most common intervention activities were face-to-face meetings, providing materials, email, and phone calls. Face-to-face meetings included one-on-one or group training sessions, often guiding school staff on how to review school immunization records, identify and follow up with conditional entrant students, and find/utilize necessary or helpful resources. The point of contact was usually the school clerk/registrar or school nurse, though many interactions involved the health aid, district nurse, principal/superintendent, or administrator/manager. The majority of interventions occurred in the fall (August through October), though many LHDs reported the intention to begin intervention efforts in the spring in this and future years. Most interventions required 1-3 hours of LHD staff time per school, including follow up. All participating LHDs said they will perform school interventions next year, which speaks to the perceived value of the interventions.

Of the many resources CDPH has available on school immunization law, the [Guide to Immunizations Required for School Entry](#), [California Immunization Handbook](#), and [ShotsforSchool.org](#) website were reported as being most helpful and were also most frequently utilized by LHD staff when performing interventions. Other frequently used resources include: [SB277 FAQs](#), [Notice of Immunizations Needed](#) template letter, [No Shots? No Records? No School](#) poster, and the [template audit letter](#). The California Immunization Handbook and [IZ Requirements 101](#) slide deck were cited as extremely helpful reference/training resources for LHD representatives, especially those new to the role.

Representatives from LHDs that participated in the Conditional Entrant Intervention Project interviews reported on the importance of building relationships with the school staff responsible for reporting. Depending on the school, this may be the school clerk/registrar, health aid, or school nurse. Garnering support from school leadership (County Office of Education, superintendent, and principal) was advantageous to many interventions. Many LHD representatives organize or attend regularly scheduled district/county school nurse meetings, and find that this facilitates relationship building with the schools and allows LHDs to conduct surveys, identify knowledge gaps, conduct trainings, provide materials, and answer questions. When approaching schools, it was beneficial to communicate that the LHD representative has the intention to provide assistance and be a resource to staff – this strategy can help to minimize the resistance or defensiveness put forth by school staff that may fear punitive action. It was recommended that representatives use the spring selective review and Kindergarten Retrospective Survey (KRS) as an opportunity to educate school staff on school immunization law and available resources.

The California Immunization Registry (CAIR) was an underutilized resource in the project, as only four of 16 LHDs reported using an immunization registry in their review of records. These LHDs used CAIR (or a local registry) to verify school immunization records, and frequently found that students classified as conditional entrant had received more doses than were recorded on school immunization records, sometimes even changing the status of the student from Conditional Entrant to All Required Immunizations. The following list represents concerns LHDs reported about the current school module in CAIR:

- Difficult to quickly assess whether or not students meet immunization requirements
- Challenging to find correct student profile using current search fields

- No feature to track and follow up with conditional entrant students
- Inability of schools to update information in CAIR via data exchange or manual entry.

During the interviews, LHD representatives were asked to make suggestions to CDPH to help facilitate their work with schools. Suggestions include the following:

Communication:

- Establish bi-directional communication between CDPH and LHDs to ensure that LHD perspective is taken into account and valued.
- Provide a list of reporting school staff name to LHDs for communication/intervention purposes.
- Inform healthcare providers of the [DTaP, Tdap, and Td catch-up schedule](#) and “accelerated schedule” option in CAIR, as many providers are not familiar with the schedule. This is relevant to many students who have recently moved from other countries and have lost childhood immunization records.

Resources:

- Make resources available to LHDs and schools in a timely fashion, preferably in the spring.
- Produce a hard copy version of the California Immunization Handbook.
- Divide IZ Requirements 101 slide deck into shorter segments and make into on-demand webinar.
- Create a Conditional Entrant job aid. (Currently under review.)
- Create a ShotsforSchool.org resource card similar to the 5”x7” promotional card (IMM-911) for EZIZ.org.

## Discussion

Based on the sizeable reduction in conditional admission rates observed in California schools with kindergartens that received an intervention, it is apparent that the interventions performed by LHDs were successful. The differences between conditional admission rates of intervention vs. non-intervention groups in the stratified samples (Figure 1) suggest that intervention efforts are most effective when aimed at schools reporting high ( $\geq 25\%$ ) conditional admission rates. As decreases were also observed in non-intervention schools, the following factors may have contributed to incentivizing schools to change reporting behavior:

- Communications from CDPH about the addition of the immunization component to the EAAP audit guide
- Threat of school audit and loss of ADA funding
- Dissemination of newly developed resources by CDPH addressing conditional entrants for schools
- Expansion by CDPH in fall of 2015 of reporting categories to include “excluded but enrolled” as an alternate to conditional entrant
- Increased attention to school immunization because of 2014-2015 measles outbreaks and SB 277.

Of the top 15 intervention schools with the greatest reductions in conditional admission rates, 12 are from Alameda County, followed by schools from Santa Barbara (1), San Francisco (1), and Ventura (1). The success of Alameda County's interventions is likely due to its early start in 2014; the significant resources dedicated to the project; and bottom-up strategizing, where the needs of reporting staff are assessed and then communicated to leadership (principals, administrators) to effectively generate awareness and support. Teams of trained LHD staff conducted audits in targeted schools with staff, at which time they reviewed school immunization records individually, trained on conditional entrant identification and follow up, enrolled/demonstrated CAIR, introduced [www.ShotsforSchool.org](http://www.ShotsforSchool.org), and shared resources. LHD staff also tracked how many students should be excluded, and followed up with schools one month after audit. In addition to the intensive interventions done with staff responsible for reporting, school nurses and clerks received training, check-in phone calls, and offers of assistance. Numerous communications were sent to schools throughout school enrollment and reporting, including importance of immunization reporting, reminders to report, lists of Alameda County's schools ranked according to their up-to-date immunization rates, and more.

### **Limitations**

This report is subject to limitations that include:

- Intervention schools were not systematically selected. While schools with conditional entrant rates >25% were the intended target for the intervention, there were differences between jurisdictions in how they implemented the intervention leading to some schools with low conditional entrant rates receiving the intervention.
- Some interventions occurred in schools classified as "non-intervention" because some jurisdictions did not report intervention activities.
- Schools within the same district and county may not be independent, and this lack of independence was not accounted for in the analysis.
- Potential confounders were not controlled for in the analysis, e.g., demographic differences among kindergartners across schools.
- Intervention activities were self-reported by LHDs, and hence subject to recall and response bias, and may have varied across LHDs and between schools.

### **Follow-Up Steps**

In follow up to the Conditional Entrant Intervention Project and with the new version of CAIR (CAIR2) launching in the fall of 2016, there are steps that CDPH can take to improve school utilization of the registry.

- Verify what percent of schools are registered with CAIR and what percent accessed the registry in 2015-2016.
- Determine to what extent CAIR2 "School Reports" addresses concerns around school utilization of the registry.