



# Whooping Cough Immunization Rates – A San Mateo County Success Story

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## Issue

How effectively did San Mateo County Public Health and school officials comply with the 2010 California law requiring that seventh through twelfth graders be immunized against pertussis before attending classes in the 2011 school year?

## Summary

Pertussis (whooping cough) is a highly contagious respiratory tract infection that typically peaks every five years. In 2010, in its worst outbreak in fifty years, California had more than 7,800 cases. San Mateo County had 97 confirmed cases in 2010 versus only 10 in 2009. The state-wide numbers, coupled with the fact that childhood pertussis immunization protection had faded in teenagers, was the basis for the passage of CA AB354 on September 29, 2010, requiring that seventh through twelfth graders be immunized against pertussis by the start of the 2011 school year. According to the law, students were to be prohibited from attending class until they had been vaccinated or had submitted permanent medical exemption (PME) or philosophical based exemption (PBE) waivers.

According to the data submitted to the California Department of Public Health (CDPH) [www.ShotsforSchools.org](http://www.ShotsforSchools.org) website, San Mateo County achieved a 98.8 percent immunization rate. An immunization rate of about 90% is sufficient to achieve herd immunity, the level that will generally protect the general population against serious outbreaks. According to that same data source, 1.1 percent of County students filed PBE waivers. The immunization rate was achieved even though the County Health Officer encouraged flexibility in applying the law's mandate that students not be allowed to attend classes until they submitted the required documentation.

Five County schools reported immunization rates below 90 percent, with three of those below 75 percent. These are low enrollment, private, charter or on-line schools with little risk of spreading the disease. California is currently one of only 18 states that allow for PBEs. A bill is pending that would make it more difficult to avoid immunizations that serve a major role in preventing the spread of infectious disease and protecting public health.

The Grand Jury acknowledges the work of the San Mateo County Health Officer, the County Immunization Program personnel, the Superintendents of the County Office of Education and local School Districts, and individual school principals for their diligence in implementing this new immunization program and providing a high level of protection against this serious, highly contagious disease. The Grand Jury concluded that parents should have ready access to immunization rates for individual schools, similar to the access they have to test scores for academic performance. It recommends that the County Public Health Immunization Program

provide these data for our schools on its website or, alternatively, link to the data on the CDPH site when published. It also recommends other childhood disease immunization and PBE exemption rates be similarly posted or linked to for the same reason.

## Background

### Pertussis disease, incidence, investigation of outbreaks

Pertussis (whooping cough) is a serious, highly contagious bacterial illness spread by coughs and sneezes. People with pertussis have severe coughing attacks, characterized by a loud “whooping” sound, which can last for months. A vaccination is the best defense against pertussis.

To immunize against pertussis, the Immunization Branch of the California Department of Public Health (CDPH) currently recommends that five doses of DTP (Diphtheria, Tetanus and Pertussis) be administered between the ages of two and six.<sup>1</sup> (Four doses are acceptable if one is given on or after the fourth birthday). However, the immunity from the vaccines diminishes over time and boosters are needed by adolescents and adults to preserve protection. A single dose of a different vaccine, Tdap, is recommended for people 11 through 64 years of age.

Immunization programs generally try to achieve “herd” or “community” immunity, in which there is resistance to the spread of infectious disease in a group because susceptible members are few, making transmission from an infected member unlikely.<sup>2</sup> Estimates of vaccination rates needed for herd immunity vary by disease and are complex to calculate. For pertussis, the Grand Jury obtained estimates from 85 – 90 percent from the San Mateo County Health Officer to 92 - 94 percent from the U.S. Center for Disease Control and Prevention.<sup>3</sup>

Pertussis typically peaks approximately every five years as natural immunity from outbreaks peaks and wanes. In 2010, California reported more than 7,800 confirmed cases statewide, including the deaths of 10 infants, in its worst outbreak in more than 50 years.

In 2010, San Mateo County had 97 confirmed cases of pertussis versus only 10 in 2009.

Number of Confirmed Pertussis Cases in San Mateo County by Year<sup>4</sup>

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
10	15	24	30	72	39	16	25	10	97	32

The CDPH website shows significantly higher numbers of pertussis cases for San Mateo County in 2010 and 2011. (189 and 56 respectively)<sup>5</sup> The discrepancy, according to a San Mateo County

<sup>1</sup> Regulations for California School Immunization Requirements Title 17, Division 1, Chapter 4, Subchapter 8. (<http://eziz.org/assets/docs/IMM-1080.pdf>)

<sup>2</sup> The American Heritage Medical Dictionary, copyright 2007, 2004 Houghton Mifflin Company.

<sup>3</sup> CDC Training Course “Smallpox: Disease, Prevention and Intervention”, Slide 17, <http://www.bt.cdc.gov/agent/smallpox/training/overview/pdf/eradicationhistory.pdf>.

<sup>4</sup> Data supplied by San Mateo County Public Health Immunization Program representative.

<sup>5</sup> <http://www.cdph.ca.gov/programs/immunize/Documents/PertussisReport1-6-2012.pdf>.

Public Health Department epidemiologist, is due to the fact that the County-provided data in the table above is derived from a historical database that includes only *confirmed* cases, while the CDPH data also includes *probable* and *suspect* cases.

The San Mateo County Public Health Department Communicable Disease unit manages investigations of both suspected and confirmed outbreaks. Reports generally come in from a provider or laboratory when confirmed in a sample. Reports also come in from parents or schools. To try to contain outbreaks, investigators attempt to identify sources and other potential exposures, notify those at risk, and keep infected people out of school or off the job until they are no longer contagious.

### **California law – Requirements and Exemptions**

The historically high 2010 pertussis incident rate, coupled with the fact that childhood pertussis immunization protection has faded in teenagers, was the basis for Governor Brown signing CA AB354 on September 29, 2010, amending California Health and Safety Code §§ 120325 and 120335 to require seventh through twelfth graders to be immunized against pertussis by the start of the 2011 school year. According to the law, students were to be prohibited from attending class until they had been vaccinated or had submitted permanent medical (PME) or personal based exemption (PBE) waivers. (California SB614 subsequently extended the deadline for another 30 days.) This same law applies to incoming public and private school seventh graders for the 2012-2013 and all subsequent school years.

California is one of 18 states that allow exemption to vaccination based on personal or conscientiously held beliefs.<sup>6</sup> (All 50 states allow medical exemptions.) In many states, individuals must object to *all* vaccines, not just a particular one, in order to use the philosophical or personal belief exemption. That is not the case in California. Under California Health and Safety Code §120365 it is sufficient for the parent or guardian to file a letter or affidavit stating that the immunization is contrary to his or her beliefs. Such standard letters are readily available in doctors' offices, clinics and schools. In the event of an outbreak, public health officials will go through school immunization records, and will send home students with exemptions.<sup>7</sup>

Federal health officials and medical organizations are urging state legislators to revoke the personal belief exemption. On February 23, 2012, Dr. Richard Pan (D-Sacramento) submitted Assembly Bill AB2019 to the California State Legislature. It would make it harder for parents to refuse to vaccinate their children. The California Medical Association, the American Academy of Pediatrics, and the California Immunization Coalition support this bill. San Mateo County's PBE rate for the 2010 - 2011 school year was 2.04 percent for kindergarten enrollment vs. a statewide rate of 2.28 percent.<sup>8</sup>

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<sup>6</sup> The others are Arizona, Arkansas, Colorado, Idaho, Louisiana, Maine, Michigan, Minnesota, New Mexico, North Dakota, Ohio, Oklahoma, Texas, Utah, Vermont, Washington, and Wisconsin. *See*, National Vaccine Information Center, <http://www.nvic.org/vaccine-laws.aspx>.

<sup>7</sup> To exercise the exemption, the requestor signs the reverse side of the required California State Immunization Record that includes the language "I understand that in case of an outbreak of any of these diseases, the child may be temporarily excluded from school for his/her protection."

<sup>8</sup> *See*, Bay Citizen <http://www.baycitizen.org/data/immunizations/>.

## Communication of Requirements

The California Department of Public Health communicated the requirements of the new law by various means. It utilized its Shots for School website<sup>9</sup> to provide extensive information about the law's requirements, with sections specifically for parents (in English and Spanish), schools and local health departments, and providers and coalitions. There are a large variety of checklists, templates, training modules, and sample letters for informing parents included on the site.

The San Mateo County Public Health Department was active locally in communicating program requirements and supporting implementation. Examples include:

- The County Health Officer met with the County Office of Education District Superintendent to discuss requirements and strategies for implementation, provided initial and ongoing guidance, and opened public immunization clinics for free or low cost immunizations.
- The County Public Health Immunization Program Coordinator made materials available for the community and school use, addressed individual issues and monitored progress
- The San Mateo County Office of Education (COE) and County Superintendent of Schools distributed materials to both public and private schools and supported them in meeting requirements. The COE does not itself submit or monitor the immunization data reported, other than for the schools it directly operates.

## Reporting of results

The CDPH operates the Shots for School website to which all public and private schools are required to report their immunization data. When schools report kindergarten immunization data, they report the number of students enrolled, the number immunized, the number of PMEs, the number of PBEs, and the number “pending”, *i.e.* the number that have not yet reported an immunization or filed an exemption.

The on-line form created for reporting pertussis immunization results did not allow for a “pending” status, instead requiring the number vaccinated, PMEs and PBEs to equal the number enrolled. The statute-required deadline for reporting all data was established as December 1, 2011.

## Investigation

This report is based on information and data obtained from the following sources:

- Interview with San Mateo County Immunization Program Management
- Interview with a senior San Mateo County Public Health Official
- Interview with a San Mateo County High School Principal
- Review of Pertussis Data reported to Shots for Schools.org website
- Review of Informational Materials communicating State law requirements

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<sup>9</sup> <http://shotsforschool.org/index.html>.

- Review of State and County Public Health and Immunization program websites
- Review of California AB 354, SB 614, AB2019
- Review of California Health and Safety Code Sections 120325 - 120380
- Review of BayCitizen.org website
- Additional footnoted References

### **Specific Additional Investigation Elements**

In addition to the details described in Background and the information obtained through the interviews and document reviews listed above, the Grand Jury evaluated the following: documentation associated with outbreak investigations; policy/guidance with respect to school compliance with the exclusion from class State mandate; the use of public clinics to support immunization efforts; and individual school data reported to the Shots for School website.

### **Investigation of Outbreaks**

The Grand Jury reviewed documentation of a September 2011 pertussis outbreak infecting eight individuals at a Redwood City elementary school. A San Mateo County Public Health Communicable Disease Investigator coordinated the investigation. The documents provided included copies of the California Reportable Disease Information Exchange (Cal-REDIE) Outbreak Morbidity Report, and various letters, case notices, emails, handwritten progress notes, specimen collection forms, doctor and laboratory reports, letters to parents unable to be reached by phone, requests to pediatric clinics for pertussis vaccination records of patients, Pertussis (Whooping Cough) Exposure Notices, and doctor authorizations for student returns to school.

The review of these documents indicated a prompt and effective response to control the outbreak by attempting to quickly identify those who may have been exposed to the eight infected individuals and to communicate exposure notices with specific instructions to all of them. Notices of “multiple case” exposures were distributed to school classes, soccer and football teams, a Cub Scout troop and individuals, based upon interviews with parents, teachers/coaches and students. These exposure notices were provided in English and Spanish.

### **Exclusion From Class Mandate Enforcement**

In reviewing the program materials provided to schools, the Grand Jury noted that that the County Health Officer encouraged the schools to be flexible in their application of the state mandate that schools exclude non-immunized or exempt students from attending classes until documentation was submitted. Specific language supporting this follows:

*“As for the issue of the timing for exclusion, I urge you to be flexible and individualized. Frequently, those who are not compliant are the same ones that can’t afford to miss out on any of their education.”<sup>10</sup>*

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<sup>10</sup>Extracted from a County Health Officer email embedded in a September 16, 2011 email from County Superintendent of Schools to Superintendents, Subject: “FW: Tdap: proposed final letter and clinic flyers”

The County Health Officer separately explained that there was a low public-health risk to this flexible approach, given that 2011 was the year following the five-year disease peak when natural immunity would be highest and a relatively low number of cases could be expected.

The Grand Jury did not attempt to determine how many districts or schools chose to enforce the State mandate versus adopt the more flexible approach sanctioned by the County Health Officer. Enforcing the State mandate would have impacted financial reimbursement from the State under the Average Daily Attendance funding system, where funding is based on a daily tally of the number of enrolled students who report for class. The County Health Officer acknowledged this as another factor considered in encouraging a flexible approach.

### **Public Immunization Clinics**

In addition to extensive communication and information support, the County provided another service in support of compliance with the law. As noted in Background, it opened public immunization clinics where students could get the immunizations needed at no charge. As a matter of strategy, these clinics were not opened until October 2011, *after* the initial and extended 30-day deadlines expired. The County Health Officer wanted to encourage students to see their own physicians for these immunizations, as many students at this age become sexually active and have other new potential health issues and risks. The opportunity to discuss these issues with their doctors would not happen in the immunization clinic setting. According to the County Health Officer, only 200 - 300 students (of almost 47,000 immunized) received their immunizations at public clinics, evidence of the effectiveness of this strategy.

### **Reporting of Results by Individual Schools**

The deadline for all schools to report their results to the Shots for School.org website was December 1, 2011. On January 24, 2012 the Grand Jury obtained from the CDPH Division of Communicable Disease Control a spreadsheet that included all of the San Mateo County data available at the time. (*See, Attachment A: Pertussis Assessment Totals for all Grades by San Mateo County School.*) Seven of 130 County schools had not yet reported their data. The Grand Jury obtained results for the seven remaining schools from a San Mateo County Immunization Program representative to complete the spreadsheet. The last school to report results, a continuation high school, did so on March 6, 2012. CDPH expects to release its final report at the end of April 2012. Since the system is locked to schools once they report their data, the Grand Jury has no reason to expect any changes to reported results when the final data are released. The Grand Jury determined the following:

- The overall reported pertussis immunization rate for the County's incoming seventh through twelfth graders was 98.8 percent (46,899 of 47,450 enrolled) vs. the County's (informal) target of 85-90 percent, stated to be sufficient to provide herd immunity.
- According to the CDPH spreadsheet, 511 (1.1 percent) students in County public and private schools filed Tdap PBEs. According to the County Health Officer, there are no anti-immunization groups active in the County at this time, a factor helping maintain high immunization rates.

- Forty-seven out of 130 schools reported 100 percent immunization rates and just five reported exemption rates exceeding 10 percent. Three of those exceeded 25 percent. They were all small private, charter, or virtual (on-line) schools.
  - Kaplan Academy (Bayshore Elementary District)
    - 16 PBEs of 55 enrolled – 29.1 percent
  - California Virtual Academy (CAVA) (Jefferson Elementary District)
    - 173 PBEs of 673 enrolled – 25.7 percent\*
  - Linda Mar Educational Center (Pacifica District)
    - 5 PBEs of 19 enrolled – 26.3 percent
  - Charter Learning Center (San Carlos Elementary District)
    - 7 PBEs of 57 enrolled – 12.3 percent
  - Wings Learning Center (Private School)
    - 2 PBEs of 15 enrolled – 13.3 percent

\*The large PBE numbers for CAVA (33.9 percent of the total PBEs for the County) prompted further Grand Jury investigation. CAVA is an on-line school operating out of Simi Valley, CA headquarters. The Grand Jury requested CAVA provide data on its San Mateo County residents only. CAVA reported an enrollment of 95 San Mateo County seventh through twelfth grade students. Of those, 26 (27.4 percent) submitted PBEs, very close to its total school-wide percentage of 25.7%.<sup>11</sup>

As a reference point for comparison purposes, the CDPH published 2010-11 immunization rates by school for the *childhood vaccination series*<sup>12</sup>. For those immunizations, the San Mateo County confirmed PBE rate was 2.04 percent, in the middle of the range of nine Bay Area counties and approximately the same rate as the statewide 2.16 percent.<sup>13</sup>

Bay Citizen.org has analyzed the Shots for School.org data for Bay Area counties and provides interactive graphs, summary data and search tools on its website enabling easy access to county, school district and individual school data for kindergarten immunizations.<sup>14</sup> According to the Bay Citizen site, these data are provided “so you can see which schools are most susceptible to an infectious outbreak.” It is unknown at this time whether the site will include similar seventh through twelfth grade pertussis data when it is released.

The Grand Jury questioned whether the data reported by schools to the site was accurate. The CDPH Immunization Branch directs a “selective review” process that is executed at the County level. The State selects a certain number of schools at random to review immunization records for its students to compare results against recommended childhood immunizations.<sup>15</sup> The County Health Officer has further expanded this effort to encompass additional schools. No evidence of deliberate misreporting has been uncovered, and individual errors and discrepancies are addressed as part of this process. (Schools are given a ten-day grace period to get student

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<sup>11</sup> Adjusting the CDPH spreadsheet data to exclude the non San Mateo County residents yields an even higher immunization rate of 99.1 percent versus 98.8 percent and lower PBE rate of 0.8 percent versus 1.1 percent.

<sup>12</sup> <http://www.cdph.ca.gov/programs/immunize/Documents/2010IZRateTable.pdf>

<sup>13</sup> <http://www.baycitizen.org/data/immunizations/>

<sup>14</sup> *Ibid.*

<sup>15</sup> This monitoring program currently surveys compliance with immunizations required up to two years of age

records complete either through immunizations or exemptions). According to the County Immunization Program representative interviewed, some schools are “amazingly compulsive” and others “less diligent” in their management of immunization records. It is not known at this time whether the State or County will extend the selective review process to include pertussis vaccination records in the future.

## Findings

- 1) California AB354, signed by Governor Brown on September 29, 2010, amended California Health and Safety Code §§120325 and 120335 to require all incoming seventh through twelfth graders to be immunized against pertussis or have permanent medical exemptions (PMEs) or personal based exemptions (PBEs) on file before the start of the 2011 school year.
- 2) According to the law, students were to be prohibited from attending class at the start of the 2011 academic year until they had been vaccinated or submitted PMEs or PBEs. California SB614 extended the deadline for another 30 days.
- 3) The County Health Officer extended the deadline a second 30 days and urged principals to be flexible and individualized in enforcing this requirement.
- 4) The County Health Officer worked directly with the County Office of Education Superintendent to communicate requirements to all affected public and private schools.
- 5) The County Health Officer delayed opening public immunization clinics until October 2011, after the State deadline extension expired, as a means of encouraging as many students as possible to see their private physicians for this immunization and other health matters. Two hundred to three hundred students used this service.
- 6) Schools were required to report their data through the California Public Health Department-managed Shots for School.org website by December 1, 2011. As of January 24, 2012, seven San Mateo County schools had not yet reported their data. A continuation high school was the last to report on March 6, 2012.
- 7) The Shots for School.org website did not allow schools to report results until 100 percent of the students had a current Tdap immunization, a PME or a PBE on file, resulting in schools’ inability to report data even if only one student of hundreds was outstanding.
- 8) Individual school kindergarten immunization rate data are available by school on California’s CDPH Immunization Branch website and on BayCitizen.org. The pertussis data obtained by the Grand Jury was obtained from CDPH pre-publication with the assistance of a San Mateo County Immunization Program official.
- 9) The overall reported pertussis immunization rate for the County’s incoming seventh through twelfth graders was 98.8 percent, a level that is sufficient to provide herd immunity and be considered a success.



- 10) The CDPH Immunization Branch expected to publish results by County, and possibly line-by-line for school, by the end of April 2012.
- 11) Four San Mateo County schools out of 130 reporting had PBE rates exceeding 10 percent, with three exceeding 25 percent. One additional school exceeded 10% exemptions due to two PMEs. All five were private, charter, or virtual (on-line) schools.
- 12) One on-line school, California Virtual Academy of the Jefferson School District, accounted for 34 percent of all PBEs in the County (173 out of 511). Only 95 of its students are San Mateo County residents, with 26 of those filing PBEs.
- 13) Adjusting the www. Shots for Schools.org data to include only enrolled students that are San Mateo County residents reduces the County PBE rate to 0.8 percent from 1.1 percent.
- 14) California is one of 18 states that allow PBEs for immunizations. AB 2109, submitted to the California legislature on Feb 23, 2012, would make it more difficult to claim a PBE by requiring “written statements from a medical practitioner stating that they (exemption requestors) have been informed of the risks and benefits of vaccines and the communicable disease they are said to prevent.”

## **Conclusions**

- 1) The County’s high pertussis immunization rate indicates that San Mateo County Public Health, in partnership with the County Office of Education and local School Districts, did an effective job implementing an aggressive new state mandate and provided a high level of protection against future pertussis outbreaks. The Grand Jury acknowledges their excellent work.
- 2) The decision to not restrict students from attending class before submitting required documentation was a low public health risk in 2011, given that pertussis tends to peak every five years and 2010 was a peak year. County Public Health and School Officials operated on the basis that the students least likely to provide the documentation on a timely basis were the ones who would be most harmed by being excluded from classes. Loss of Average Daily Attendance funds was apparently also a consideration.
- 3) The relatively low number of students getting immunizations through the public clinics indicated the success of the County Health Officer’s strategy to have as many students as possible schedule office visits with their individual physicians for the immunizations.
- 4) Childhood immunization reporting on the Shots for Schools website allows for a category of “conditional” where data are not yet available. The fact that the pertussis on-line reporting form did not allow for conditional reporting contributed to delays in reporting and required heavy follow-up by the State, County and School Districts to achieve closure.
- 5) The relatively high rates of PBEs in small charter, private or on-line schools are a lower public health risk than equivalent levels in large public or private schools. It does not

appear that schools actively encouraged PBE filings in any significant numbers in order to achieve faster closure and enable reporting of their data to the State.

- 6) Since high rates of PBEs from vaccines of any type could increase risks of contracting contagious, preventable diseases in a school setting, parents should have convenient access to such data for schools they are considering, similar to the access they have to academic test scores.

## **Recommendations**

The Grand Jury recommends that the San Mateo County Board of Supervisors direct the San Mateo County Public Health Department to:

- 1) Within 90 days of availability, post the San Mateo County pertussis immunization rates, by school, on its website, along with some targeted education interpreting the data and emphasizing the importance of immunizations. Alternatively, if the California Public Health Immunization Branch posts the data on its website, a link to that site, with appropriate background information, would be sufficient.
- 2) At the same time, similarly post data or a link to it for San Mateo County kindergarten immunization rates by school.
- 3) By August 2012, evaluate and apply appropriate lessons learned from the success of the pertussis immunization program to the childhood immunization program to increase the immunization rate of kindergarten students in San Mateo County.

**Attachment A**  
**Pertussis Assessment Totals for all Grades by San Mateo County School**  
**(As reported by the schools to the CDPH Shots for Schools Website)**

**7-12th Grade Pertussis (Tdap) Immunization Assessment**

**San Mateo County**

In schools with reported enrollment of 10 or more 7-12th grade students

PUBLIC/ PRIVATE	DISTRICT NAME	SCHOOL NAME	REPORTING STATUS	Total All Grades				
				Up-to-Date	PME	PBE	Enrolled	%nonImm
PUBLIC	BAYSHORE ELEMENTARY	GARNET J. ROBERTSON INTERMEDIATE	Reported	94	0	0	94	0
PUBLIC	BAYSHORE ELEMENTARY	KAPLAN ACADEMY OF CALIFORNIA-S	Reported	39	0	16	55	29.09
PUBLIC	BELMONT-REDWOOD SCHOOL DISTRICT	RALSTON INTERMEDIATE	Reported	626	0	6	632	0.95
PUBLIC	BRISBANE ELEMENTARY	LIPMAN MIDDLE	Reported	118	0	2	120	1.67
PUBLIC	BURLINGAME ELEMENTARY	BURLINGAME INTERMEDIATE	Reported	574	0	2	576	0.35
PUBLIC	CABRILLO UNIFIED	HALF MOON BAY HIGH	Reported	895	1	21	917	2.40
PUBLIC	CABRILLO UNIFIED	MANUEL F. CUNHA INTERMEDIATE	Reported	500	0	18	518	3.47
PUBLIC	CABRILLO UNIFIED	PILARCITOS ALTERNATIVE HIGH (COM	Reported	36	0	1	37	2.70
PUBLIC	HILLSBOROUGH CITY ELEMENTARY	CROCKER MIDDLE	Reported	336	2	2	340	1.18
PUBLIC	JEFFERSON ELEMENTARY	BENJAMIN FRANKLIN INTERMEDIATE	Reported	466	1	0	467	0.21
PUBLIC	JEFFERSON ELEMENTARY	CALIFORNIA VIRTUAL ACADEMY @ S	Reported	500	0	173	673	25.71
PUBLIC	JEFFERSON ELEMENTARY	FERNANDO RIVERA INTERMEDIATE	Reported	474	0	0	474	0.00
PUBLIC	JEFFERSON ELEMENTARY	THOMAS R. POLLICITA MIDDLE	Reported	449	0	0	449	0.00
PUBLIC	JEFFERSON UNION HIGH	JEFFERSON HIGH	Reported	1145	0	3	1148	0.26
PUBLIC	JEFFERSON UNION HIGH	OCEANA HIGH	Reported	599	0	3	602	0.50
PUBLIC	JEFFERSON UNION HIGH	TERRA NOVA HIGH	Reported	1218	0	4	1222	0.33
PUBLIC	JEFFERSON UNION HIGH	THORNTON HIGH	Reported	116	0	9	126	7.14
PUBLIC	JEFFERSON UNION HIGH	WESTMOOR HIGH	Reported	1712	0	3	1715	0.17
PUBLIC	LA HONDA-PESCADERO UNIFIED	PESCADERO HIGH	Reported	146	0	1	147	0.68
PUBLIC	LAS LOMITAS ELEMENTARY	LA ENTRADA MIDDLE	Reported	263	0	1	264	0.38
PUBLIC	MENLO PARK CITY ELEMENTARY	HILLVIEW MIDDLE	Reported	462	0	5	467	1.07
PUBLIC	MILLBRAE ELEMENTARY	TAYLOR MIDDLE	Reported	569	1	0	570	0.18
PUBLIC	PACIFICA	CABRILLO ELEMENTARY	Reported	128	0	2	130	1.54
PUBLIC	PACIFICA	INGRID B. LACY MIDDLE	Reported	355	0	4	359	1.11
PUBLIC	PACIFICA	LINDA MAR EDUCATIONAL CENTER	Reported	14	0	5	19	26.32
PUBLIC	PACIFICA	OCEAN SHORE ELEMENTARY	Reported	80	0	1	81	1.23
PUBLIC	PACIFICA	VALLEMAR ELEMENTARY	Reported	125	0	3	128	2.34
PUBLIC	PORTOLA VALLEY ELEMENTARY	CORTE MADERA	Reported	147	0	1	148	0.68
PUBLIC	RAVENSWOOD CITY ELEMENTARY	BELLE HAVEN ELEMENTARY	Reported	124	0	2	126	1.59
PUBLIC	RAVENSWOOD CITY ELEMENTARY	CESAR CHAVEZ ELEMENTARY	Reported	182	0	1	183	0.55

PUBLIC	SEQUOIA UNION HIGH	REDWOOD HIGH	Reported	317	0	4	321	1.25
PUBLIC	SEQUOIA UNION HIGH	SEQUOIA HIGH	Reported	2016	1	22	2039	1.13
PUBLIC	SEQUOIA UNION HIGH	SUMMIT PREPARATORY CHARTER HI	Reported	422	1	2	425	0.71
PUBLIC	SEQUOIA UNION HIGH	WOODSIDE HIGH	Reported	1746	0	12	1758	0.68
PUBLIC	SOUTH SAN FRANCISCO U	ALTA LOMA MIDDLE	Reported	520	0	2	522	0.38
PUBLIC	SOUTH SAN FRANCISCO U	BADEN HIGH (CONTINUATION)	Reported	128	0	0	128	0.00
PUBLIC	SOUTH SAN FRANCISCO U	EL CAMINO HIGH	Reported	1448	0	5	1453	0.34
PUBLIC	SOUTH SAN FRANCISCO U	PARKWAY HEIGHTS MIDDLE	Reported	348	0	3	351	0.85
PUBLIC	SOUTH SAN FRANCISCO U	SOUTH SAN FRANCISCO HIGH	Reported	1517	0	2	1519	0.13
PUBLIC	SOUTH SAN FRANCISCO U	WESTBOROUGH MIDDLE	Reported	462	0	6	468	1.28
PUBLIC	WOODSIDE ELEMENTARY	WOODSIDE ELEMENTARY	Reported	101	0	1	102	0.98
PRIVATE		ALL SOULS CATHOLIC ELEMENTARY	Reported	49	0	0	49	0.00
PRIVATE		ALMA HEIGHTS CHRISTIAN ACADEMY	Reported	202	0	5	207	2.42
PRIVATE		ALPHA BEACON CHRISTIAN	Reported	39	0	0	39	0.00
PRIVATE		BEECHWOOD SCHOOL	Reported	32	0	0	32	0.00
PRIVATE		BRIDGEMONT HIGH SCHOOL	Reported	40	0	0	40	0.00
PRIVATE		CHARLES ARMSTRONG	Reported	68	0	0	68	0.00
PRIVATE		CRYSTAL SPRINGS UPLANDS SCHOOL	Reported	338	0	1	339	0.29
PRIVATE		EASTSIDE COLLEGE PREPARATORY SC	Reported	279	0	0	279	0.00
PRIVATE		GERMAN-AMERICAN INTERNATIONAL	Reported	21	0	1	22	4.55
PRIVATE		GOOD SHEPHERD ELEMENTARY	Reported	53	0	1	54	1.85
PRIVATE		HIGHLANDS CHRISTIAN SCHOOLS	Reported	93	0	0	93	0.00
PRIVATE		HILLDALE SCHOOL	Reported	11	0	0	11	0.00
PRIVATE		HOLY ANGELS ELEMENTARY	Reported	56	0	0	56	0.00
PRIVATE		IMMACULATE HEART OF MARY SCHC	Reported	60	0	0	60	0.00
PRIVATE		JUNIPERO SERRA HIGH SCHOOL	Reported	889	1	8	898	1.00
PRIVATE		LYDIAN ACADEMY	Reported	15	0	0	15	0.00
PRIVATE		MENLO SCHOOL	Reported	709	0	9	718	1.25
PRIVATE		MERCY HIGH	Reported	477	0	4	481	0.83
PRIVATE		MID-PENINSULA EDUCATION CENTER	Reported	110	0	1	111	0.90
PRIVATE		NATIVITY CATHOLIC SCHOOL K-8	Reported	58	0	0	58	0.00
PRIVATE		NOTRE DAME ELEMENTARY	Reported	61	0	0	61	0.00
PRIVATE		NOTRE DAME HIGH	Reported	445	0	2	447	0.45
PRIVATE		ODYSSEY SCHOOL	Reported	16	0	0	16	0.00
PRIVATE		OUR LADY OF ANGELS ELEMENTARY	Reported	64	0	2	66	3.03
PRIVATE		OUR LADY OF MERCY ELEMENTARY	Reported	92	1	0	93	1.08
PRIVATE		OUR LADY OF MT. CARMEL	Reported	59	0	0	59	0.00
PRIVATE		OUR LADY OF PERPETUAL HELP	Reported	64	0	0	64	0.00
PRIVATE		PENINSULA	Reported	39	0	1	40	2.50

PUBLIC	RAVENSWOOD CITY ELEM	COSTANO ELEMENTARY	Reported	122	0	1	123	0.81
PUBLIC	RAVENSWOOD CITY ELEM	EAST PALO ALTO ACADEMY HIGH	Reported	235	0	0	235	0.00
PUBLIC	RAVENSWOOD CITY ELEM	RONALD MCNAIR ACADEMY	Reported	187	1	4	192	2.60
PUBLIC	RAVENSWOOD CITY ELEM	WILLOW OAKS ELEMENTARY	Reported	124	0	0	124	0.00
PUBLIC	REDWOOD CITY ELEMENT	CLIFFORD ELEMENTARY	Reported	166	0	0	166	0.00
PUBLIC	REDWOOD CITY ELEMENT	GARFIELD ELEMENTARY	Reported	150	0	0	150	0.00
PUBLIC	REDWOOD CITY ELEMENT	HOOVER ELEMENTARY	Reported	156	0	0	156	0.00
PUBLIC	REDWOOD CITY ELEMENT	JOHN F. KENNEDY MIDDLE	Reported	576	0	0	576	0.00
PUBLIC	REDWOOD CITY ELEMENT	MCKINLEY INSTITUTE OF TECHNOLOGY	Reported	259	0	0	259	0.00
PUBLIC	REDWOOD CITY ELEMENT	NORTH STAR ACADEMY	Reported	177	0	0	177	0.00
PUBLIC	REDWOOD CITY ELEMENT	ROY CLOUD ELEMENTARY	Reported	188	0	3	191	1.57
PUBLIC	REDWOOD CITY ELEMENT	SELBY LANE ELEMENTARY	Reported	152	0	2	154	1.30
PUBLIC	SAN BRUNO PARK ELEMEN	PARKSIDE INTERMEDIATE	Reported	474	0	4	478	0.84
PUBLIC	SAN CARLOS ELEMENTARY	CENTRAL MIDDLE	Reported	306	0	8	314	2.55
PUBLIC	SAN CARLOS ELEMENTARY	CHARTER LEARNING CENTER	Reported	50	0	7	57	12.28
PUBLIC	SAN CARLOS ELEMENTARY	TIERRA LINDA MIDDLE	Reported	327	0	0	327	0.00
PUBLIC	SAN MATEO COUNTY OFFI	CAMP GLENWOOD	Reported	23	0	0	23	0.00
PUBLIC	SAN MATEO COUNTY OFFI	CANYON OAKS YOUTH CENTER	Reported	10	0	0	10	0.00
PUBLIC	SAN MATEO COUNTY OFFI	CENTRAL COMMUNITY	Reported	17	0	0	17	0.00
PUBLIC	SAN MATEO COUNTY OFFI	GATEWAY CENTER	Reported	90	0	0	90	0.00
PUBLIC	SAN MATEO COUNTY OFFI	HILLCREST AT YOUTH SERVICES CENTER	Reported	117	0	0	117	0.00
PUBLIC	SAN MATEO COUNTY OFFI	NORTH COMMUNITY	Reported	18	0	0	18	0.00
PUBLIC	SAN MATEO COUNTY OFFI	SAN MATEO COUNTY SPECIAL EDUCATION	Reported	97	0	1	98	1.02
PUBLIC	SAN MATEO UNION HIGH	ARAGON HIGH	Reported	1474	1	10	1485	0.74
PUBLIC	SAN MATEO UNION HIGH	BURLINGAME HIGH	Reported	1272	5	8	1285	1.01
PUBLIC	SAN MATEO UNION HIGH	CAPUCHINO HIGH	Reported	1118	2	4	1124	0.53
PUBLIC	SAN MATEO UNION HIGH	HILLSDALE HIGH	Reported	1292	0	11	1303	0.84
PUBLIC	SAN MATEO UNION HIGH	MILLS HIGH	Reported	1327	0	2	1329	0.15
PUBLIC	SAN MATEO UNION HIGH	PENINSULA HIGH (CONTINUATION)	Reported	243	3	2	248	2.02
PUBLIC	SAN MATEO UNION HIGH	SAN MATEO HIGH	Reported	1358	1	2	1361	0.22
PUBLIC	SAN MATEO-FOSTER CITY	ABBOTT MIDDLE	Reported	537	0	4	541	0.74
PUBLIC	SAN MATEO-FOSTER CITY	BOREL MIDDLE	Reported	593	2	4	599	1.00
PUBLIC	SAN MATEO-FOSTER CITY	BOWDITCH MIDDLE	Reported	615	3	4	622	1.13
PUBLIC	SAN MATEO-FOSTER CITY	NORTH SHOREVIEW ELEMENTARY	Reported	50	0	1	51	1.96
PUBLIC	SAN MATEO-FOSTER CITY	THE BAYSIDE S.T.E.M. ACADEMY	Reported	340	0	0	340	0.00
PUBLIC	SBE - EVEREST PUBLIC HIGH	EVEREST PUBLIC HIGH	Reported	294	5	1	300	2.00
PUBLIC	SEQUOIA UNION HIGH	CARLMONT HIGH	Reported	2074	2	19	2095	1.00
PUBLIC	SEQUOIA UNION HIGH	EAST PALO ALTO PHOENIX ACADEMY	Reported	297	0	3	300	1.00
PUBLIC	SEQUOIA UNION HIGH	MENLO-ATHERTON HIGH	Reported	1981	0	16	1997	0.80

PRIVATE	REDEEMER LUTHERAN ELEMENTARY	Reported	40	0	0	40	0.00	
PRIVATE	RONALD C. WORNICK JEWISH DAY SC	Reported	33	0	1	34	2.94	
PRIVATE	SACRED HEART SCHOOLS, ATHERTON	Reported	718	1	0	719	0.14	
PRIVATE	SEA CREST SCHOOL	Reported	51	0	1	52	1.92	
PRIVATE	SPECTRUM CENTER	Reported	21	0	1	22	4.55	
PRIVATE	ST. CATHERINE OF SIENA ELEMENTAR	Reported	67	0	0	67	0.00	
PRIVATE	ST. CHARLES ELEMENTARY	Reported	60	0	0	60	0.00	
PRIVATE	ST. DUNSTAN'S ELEMENTARY	Reported	57	0	0	57	0.00	
PRIVATE	ST. GREGORY	Reported	71	0	0	71	0.00	
PRIVATE	ST. MATTHEW CATHOLIC	Reported	139	1	0	140	0.71	
PRIVATE	ST. PIUS ELEMENTARY	Reported	65	0	0	65	0.00	
PRIVATE	ST. RAYMOND'S	Reported	53	0	0	53	0.00	
PRIVATE	ST. ROBERT SCHOOL	Reported	68	1	0	69	1.45	
PRIVATE	ST. TIMOTHY	Reported	40	0	0	40	0.00	
PRIVATE	ST. VERONICA CATHOLIC SCHOOL	Reported	74	0	0	74	0.00	
PRIVATE	STANBRIDGE ACADEMY	Reported	81	0	0	81	0.00	
PRIVATE	THE WILKINSON SCHOOL	Reported	13	0	0	13	0.00	
PRIVATE	WEST BAY CHRISTIAN ACADEMY	Reported	11	0	1	12	8.33	
PRIVATE	WEST BAY HIGH SCHOOL	Reported	21	0	1	22	4.55	
PRIVATE	WINGS LEARNING CENTER	Reported	13	2	0	15	13.33	
PRIVATE	WOODLAND SCHOOL	Reported	27	0	0	27	0.00	
PRIVATE	WOODSIDE PRIORY	Reported	334	0	2	336	0.60	
			130	46899	39	511	47450	1.16

	CAVA (SMC only)		69	0	26	95	27.37
San Mateo County Residents	Adjusted for CAVA Totals		325	39	364	46872	0.78

† Up-To-Date: Completed Pertussis Booster Requirement (DTaP, DTP, or Tdap on or after 7th birthday)

\* PME: A Permanent Medical Exemption to the pertussis booster

§ PBE: A Personal Belief Exemption, whereby a parent signs an affidavit requesting an exemption from the pertussis booster required for school entry because the immunization is contrary to the parent's beliefs.