

Kindergarten Immunization Assessment, 2023-2024

Executive summary

Immunization requirements for school entry help protect children and communities from vaccine-preventable diseases. Schools in California are required to report student immunization status to the California Department of Public Health (CDPH) every year. This report summarizes California student immunization rates reported at kindergarten in the 2023-2024 school year.

Schools reported immunization status for 569,680 students in kindergarten, including transitional kindergarten, in 2023-2024. The proportion of students reported as having received all required immunizations was 93.7%, a decrease from 94.1% in 2022-2023 but higher than 92.8% as reported in 2020-2021. Reported statewide rates for specific immunizations remained high: 95.4% for required doses of Diphtheria, Tetanus and Pertussis (DTaP), 95.7% for Varicella, 96.1% for Polio, 96.2% for Measles, Mumps and Rubella (MMR), and 97.2% for Hepatitis B. Rates continue to vary widely by county. Similar to recent years, 0.1% of kindergarteners were reported as having a permanent medical exemption to one or more required immunizations.

CDPH and local health departments in California continue to closely monitor immunization coverage of students and to support schools in protecting the health of their students and communities.

Introduction

This report summarizes immunization status of students in kindergarten, including transitional kindergarten, reported by schools in the 2023-2024 school year. All schools with kindergartens in California are required to report annually on student compliance with immunization requirements per California Health and Safety Code Sections 120325-120375. In 2021-2022 and 2022-2023, schools were also required to report immunization status of first grade students to follow immunization trends during the COVID-19 pandemic.

Over the past decade, California laws have modified:

- Medical exemptions to required immunizations: Since 2021, per Senate Bills [\(SB\) 276](#) and [SB 714](#), new medical exemptions for school and child care entry must be issued through CAIR-ME, an electronic statewide database, by physicians and surgeons licensed with the Medical Board or Osteopathic Medical Board of California and meet criteria for appropriate exemptions from the Centers for Disease Control and Prevention, Advisory Committee on Immunization Practices, and American Academy of Pediatrics.
- Personal beliefs exemptions (PBEs): PBEs have not been permitted since 2016 per [SB 277](#).
- Required doses: Since 2019, students entering kindergarten are required to receive two rather than one dose of Varicella (chickenpox) vaccine due to changes in the [California Code of Regulations](#).

Methods

During the autumn of 2023-2024, schools registered with the California Department of Education reported to CDPH on immunization data of kindergarteners. Based on their immunization status, students were classified by school staff into the following categories:

- Received all required immunizations, including the following doses:

- 5 or more of Diphtheria, Tetanus and Pertussis (DTaP) vaccine (4 doses are acceptable if at least 1 dose was received on or after the fourth birthday): ['4+DTP'];
- 4 or more of Polio vaccine (3 doses are acceptable if at least 1 dose was received on or after the fourth birthday): ['3+ Polio'];
- 2 doses of Measles, Mumps and Rubella (MMR) vaccine or two doses of Measles, two doses of Mumps, and one dose of Rubella vaccine, separately or combined, on or after the first birthday: ['2+ MMR'];
- 3 or more of Hepatitis B (Hep B) vaccine: ['3+ Hep B'], and
- 2 or more of Varicella (Var): ['2+ Var']. History of chickenpox disease is currently required to be reported as a permanent medical exemption. From 2000-2019, the requirement was for 1 or more doses of Varicella vaccine or a history documented by a physician of having had disease.
- Conditional entrants who had:
 - Not received all required doses but were not overdue for required doses, or
 - A temporary medical exemption to one or more required immunizations.
 Conditional entrants are required to receive additional doses after entry.
- Have a permanent medical exemption (PME) to one or more required immunizations.
- Other students lacking immunizations. Under SB 277, entrants since the 2016-2017 school year have not been required to have immunizations if they attend:
 - A home-based private school or
 - A public independent study program and do not receive classroom-based instruction.
 - In addition, students who have an individualized education program (IEP) may continue to receive all necessary services identified in their IEP regardless of their immunization status.
 Schools are still required to request, maintain, and report records of immunizations that have been received for these students. Students in these settings were classified in this category if they lacked required immunizations and did not meet the criteria for other categories.
- Children overdue for one or more required immunizations and subject to exclusion from school until the overdue doses have been received.

Personal beliefs exemptions (PBEs) have no longer been an option for children entering kindergarten since the 2016-2017 school year under SB 277.

Starting in the 2016-2017 school year, any immunizations received by children with PBEs, PMEs, or other exemptions for different immunizations are reported in the completion rates of each specific required immunization series (e.g., 4+ DTP, 2+ MMR, etc.).

Due to rounding, total figures may differ from the total sums of their components. Differences were calculated between exact figures, varying at times by 0.1% from the differences between rounded figures.

Results

In 2023-2024, 7,953 schools reported the immunization status of 569,680 kindergarten students (Table 1). Similar to previous years, public schools accounted for the majority of schools reporting kindergarten education (6,160 public schools; 77% of all schools) and kindergarten students (522,949 public students; 92% of all students). Among nonreporting schools, most (254 out of 293) were private schools.

All required immunizations: Among the 569,680 reported kindergarten students, 93.7% had received all required immunizations in 2023-2024, a decrease of 0.4 percentage points from 94.1% in 2022-2023 (Table 1 and Figure 1). During the COVID-19 pandemic, the rate of kindergarteners receiving all required

immunizations fell to 92.8% in 2020-2021, but rose to 94.0% in 2021-2022. First grade immunization rates were higher than kindergarten immunization rates when reported in 2021-2022 and 2022-2023.

Specific immunization series: Completion rates for specific immunization series among kindergarteners were: 95.4% for DTaP, 95.7% for Varicella, 96.1% for Polio, 96.2% for MMR, and 97.2% for Hep B (Table 1 and Figure 2). Immunization rates in 2023-2024 were decreased compared to 2022-2023 rates, but rates for all antigens remained above 95%. MMR rates decreased in public school students from 96.6% to 96.2%, but increased in private school students from 95.3% to 95.8%.

Permanent medical exemptions: The proportion of kindergarteners reported with PME was 0.1% in 2023-2024, decreased from 0.2% in 2022-2023 (Table 1 and Figure 3). Both public and private schools reported fewer medical exemptions in 2023-2024 than in previous years.

Overdue: Kindergarten students reported as overdue for immunizations was 1.5% in 2023-2024, decreased from 1.8% in 2022-2023, 2.3% in 2021-2022, and 4.0% in 2020-2021 (Figure 4).

Conditional entrants: The proportion of kindergarteners reported as conditional entrants was 2.0% in 2023-2024, an increase of 0.4 percentage points from 1.6% in 2022-2023 (Table 1 and Figure 4). The number of reported temporary medical exemptions has decreased over the last several years, from a high of 1,592 kindergarten students in 2017-2018 (0.3% of all students and 15% of conditional entrants) to 383 students in 2023-2024 (0.1% of all students and 3% of conditional entrants).

Other students lacking required immunizations: The proportion of kindergarteners reported as lacking one or more required immunizations who attend a public independent study program and do not receive classroom-based instruction, receive IEP services, or attend a home-based private school was 2.7% in 2023-2024 (Table 1 and Figure 4). Most of these students (11,170 out of 15,183; 74% for category, 2.0% of all students) were enrolled in public independent study programs. The proportion of kindergarten students in this category has steadily increased from 0.5% of all students in 2016-2017 when SB 277 went into effect (Figure 4).

Combined categories: Students who are required to receive all mandated vaccines are reported in three categories: students who have received all required vaccines, conditional entrants, and students overdue for required doses. The sum of kindergarteners reported in these three categories decreased by 0.3 percentage points from 97.5% in 2022-2023 to 97.2% in 2023-2024.

Conversely the sum of kindergarteners reported in categories in which students are *not* required to receive all required immunizations because of PMEs or other criteria specified in SB 277 increased by 0.3 percentage points from 2.5% in 2022-2023 to 2.8% in 2023-2024.

County-level immunization rates: Immunization rates varied widely by county, with lower rates in northern and central regions (Tables 2 and 3, Figures 5 and 6). In 2023-2024, 14 (24%) of 58 counties reported kindergarten all required immunization rates below 90%, compared to 15 (26%) counties in 2022-2023.

MMR rates by county ranged from 75.8% to more than 99%, with a similar regional pattern as all required immunization rates (Table 4 and Figure 6). The number of counties reporting kindergarten MMR rates below 95% was 16 (28%) in 2023-2024, including 5 counties with MMR rates lower than 90%. First grade student MMR rates were higher than kindergarten MMR rates over the two years when this additional reporting requirement was in place.

Discussion

California schools continue to comply at high levels in reporting immunization status of their kindergarten students annually and also of their first grade students during the pandemic. In 2023-2024, 99.4% of public schools and 87.6% of private schools reported student immunization status, including more than 99% of all kindergarten students counted in [California Department of Education \(CDE\) enrollment data](#).

Kindergarten enrollment across public and private schools decreased by 2.5% from 2022-2023 to 2023-2024, whereas transitional kindergarten (TK) student enrollment increased by 29.6%, likely due to phased implementation of [universal transitional kindergarten](#). In 2023-2024, CDE began reporting TK enrollment data as a separate grade level whereas in previous years, public school kindergarten data included transitional kindergarten participation. All TK and kindergarten students are required to have immunizations at entry, and the immunization reporting process does not distinguish between TK and traditional kindergarten students.

The proportion of kindergarten students reported as receiving all required immunizations was 93.7% in 2023-2024, compared to 94.1% in 2022-2023 and 92.8% in 2020-2021, at the beginning of the COVID-19 pandemic. The proportion of students overdue for required immunizations decreased while conditional entrants increased, suggesting that some students may still be catching up on immunizations missed during the pandemic.

Medical exemptions have decreased since implementation of CAIR-ME in 2021 per SB 276 and SB 714. In 2023-2024, 0.1% of kindergarten were reported with PME, the lowest rate of PMEs since 2015-2016, when personal belief exemptions were still permitted prior to SB 277.

The largest category of students who did not meet all required immunizations in 2023-2024 were the 2.7% reported in other categories of exemptions under criteria in SB 277, with 2.0% reported as being enrolled in [independent study](#). It is unclear how policy and school changes to expand independent study options in [2021-2022](#) and [2022-2023](#) during the COVID-19 pandemic have affected the overall number of students in independent study programs in subsequent years and may have affected immunization reporting.

California kindergarten immunization rates in 2023-2024 remain higher than national rates reported by [CDC](#):

	MMR	DTP	Polio	Varicella
California	96.2%	95.4%	96.1%	95.7%
U.S.	92.7%	92.3%	92.6%	92.4%

MMR coverage in California kindergarteners has exceeded 95% since at least 2016-2017; reporting in prior years excluded MMR doses received by students with exemptions for other immunizations. Regional differences in immunization rates persist, with 28% of counties having reported MMR rates in kindergarten students below 95%, an approximate threshold necessary to prevent the transmission of measles.

Overall state-wide immunization levels among kindergarten students remained high in 2023-2024. Children in schools and regions with lower immunization rates remain at higher risk of contracting and transmitting vaccine preventable diseases. Efforts to monitor, support, and increase immunizations to protect students should continue in all communities.

Limitations

This report is subject to limitations that include:

- CDE data on enrollment in independent study courses are not yet available for the 2019-2023 school years to verify information reported by school on the number of students in independent study. Any misclassification of student status could lead to incorrectly applied school immunization requirements and bias the reported immunization rates in either direction.
 - CDPH does not know the immunization status of any kindergarten students attending schools that registered with CDE but did not report. In 2023-2024, 293 California schools listed with CDE did not report on school immunizations, including 254 private schools and 39 public schools. Underreporting could have biased the reported immunization rates in either direction. The schools that did not report educate a very small proportion of all students.
 - Similar to previous years, [CDE private school data](#) and thus immunization reporting to CDPH are limited to private schools with enrollment of 6 or more students. This data limitation may result in underestimates of private school enrollment, including for home schools, and overestimates of private school immunization rates.
 - Completeness of immunization records and school reporting might have been reduced during the initial part of the COVID-19 pandemic and resulted in underestimates of immunization rates, especially during 2020-2021 and 2021-2022.
 - The timing of immunization is often not included in the assessment criteria; if doses were given at inappropriate ages or intervals, reported rates may overestimate levels of immunity.
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Figures

Figure 1. Percentage of Students with All Required Immunizations by School Year, Kindergarten 2014-2015 to 2023-2024, and First Grade 2021-2022 to 2022-2023

Figure 2. Percentage of Kindergarten Students with Specific Required Immunizations by Series and School Year, 2014-2015 to 2023-2024

Figure 3. Percentage of Kindergarten Students with Permanent Medical Exemptions (PME) by School Type and by School Year, 2014-2015 to 2023-2024

Figure 4. Percentage of Kindergarten Students by Reported Admission Status by School Year, 2016-2017 to 2023-2024

Figure 5. Map: Kindergarten Students with All Required Immunizations by County and School Year, 2022-2023 to 2023-2024

Figure 6. Map: Kindergarten Students with Two or More Doses of MMR Vaccine by County and School Year, 2022-2023 to 2023-2024

Tables

Table 1. Kindergarten Immunization Assessment Summary, 2021-2022 to 2023-2024

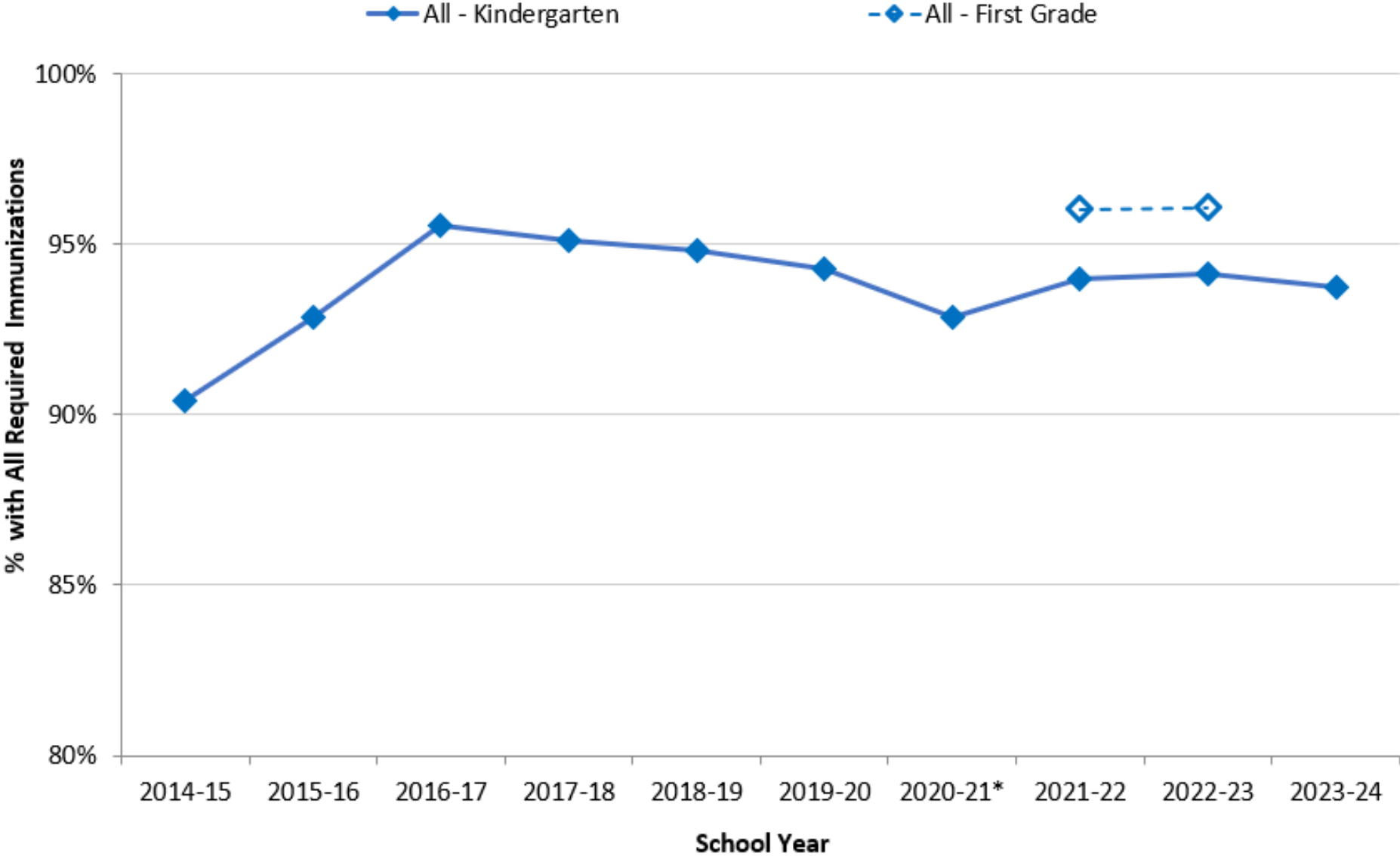
Table 2. Total Kindergarten Enrollment and Student Immunization Status, 2023-2024, by County

Table 3. Total Kindergarten Enrollment and Specific Required Immunizations by Series, 2023-2024, by County

Table 4: Students with Two or More Doses of MMR Vaccine, Kindergarten 2021-2022 to 2023-2024, and First Grade 2021-2022 to 2022-2023, by County

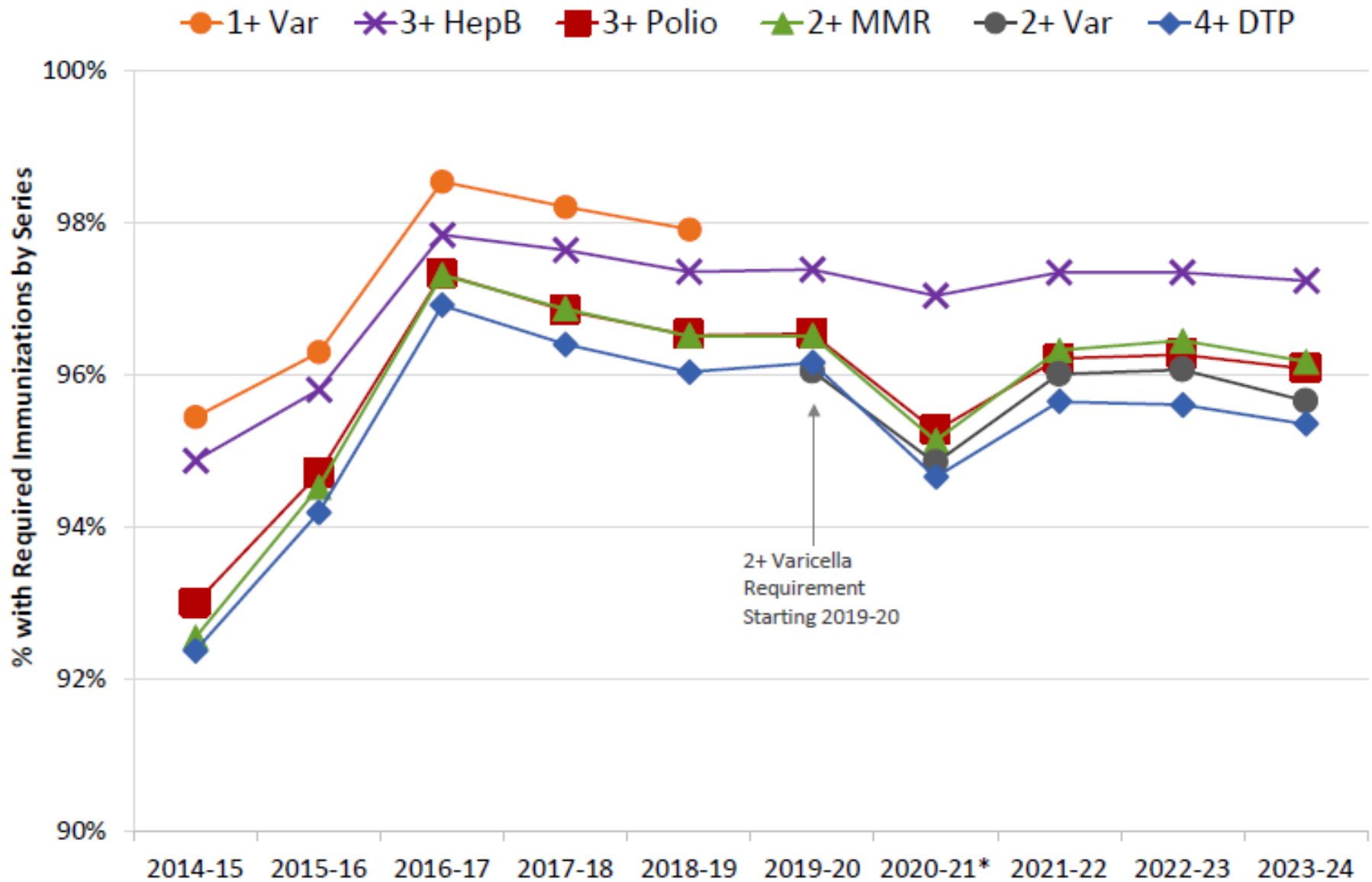
[Download Data](#)

Figure 1. Percentage of Students with All Required Immunizations by School Year, Kindergarten 2014-2015 to 2023-2024, and First Grade 2021-2022 to 2022-2023



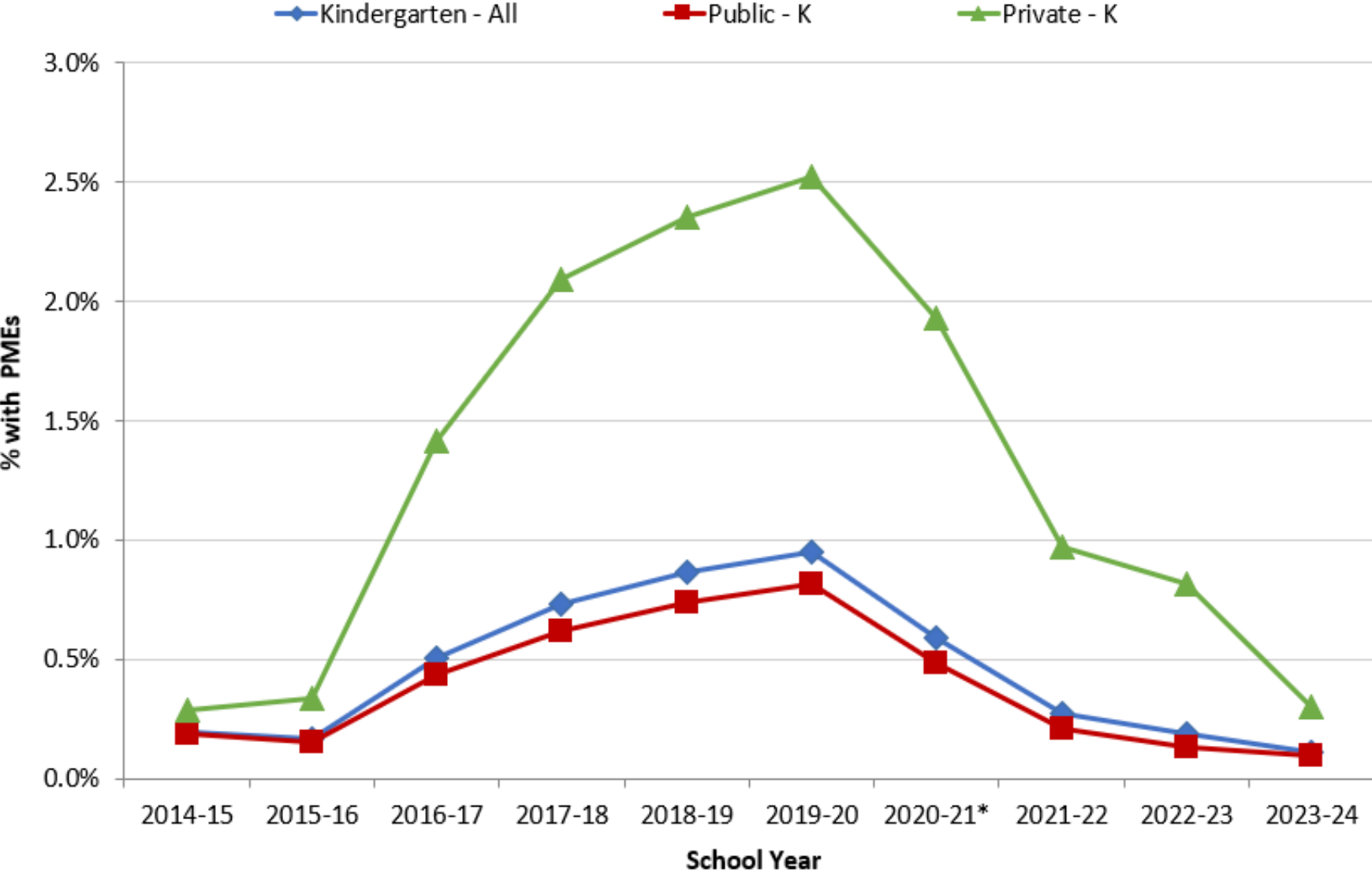
*School beginning during first year of COVID-19 pandemic.

Figure 2. Percentage of Kindergarten Students with Specific Required Immunizations by Series and School Year, 2014-2015 to 2023-2024



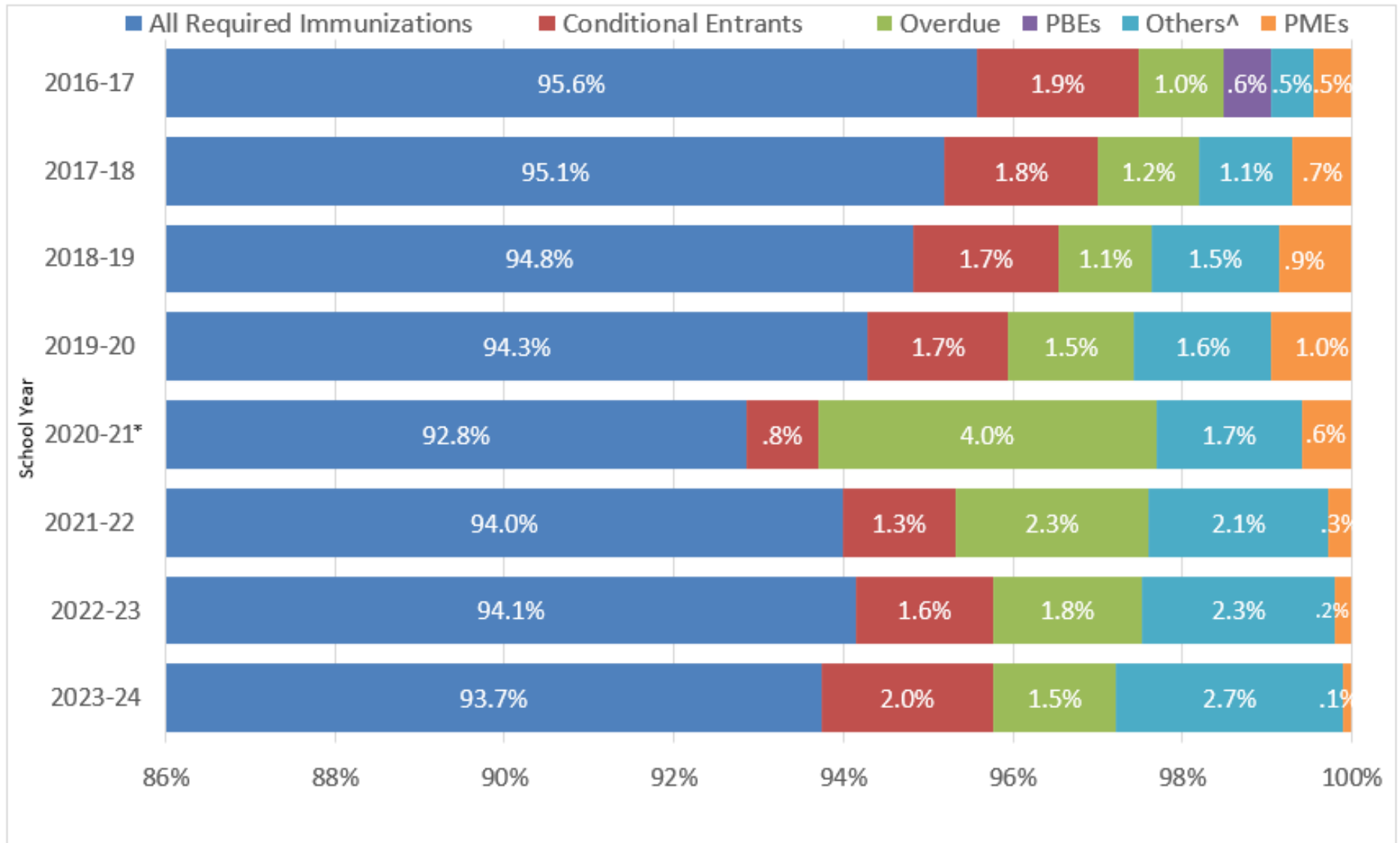
*School beginning during first year of COVID-19 pandemic.

Figure 3. Percentage of Kindergarten Students with Permanent Medical Exemptions (PME) by School Type and by School Year, 2014-2015 to 2023-2024



*School beginning during first year of COVID-19 pandemic.

Figure 4. Percentage of Kindergarten Students by Reported Admission Status by School Year, 2016-2017 to 2023-2024



^ Other children lacking required immunizations under criteria specified in SB 277.

*School beginning during first year of COVID-19 pandemic.

Figure 5. Kindergarten Students with All Required Immunizations, by School Year and County, 2022-2023 to 2023-2024

≤ 89.9% 90.0 – 94.9% 95.0 – 100%

Kindergarten
2022-2023 School Year



Kindergarten
2023-2024 School Year

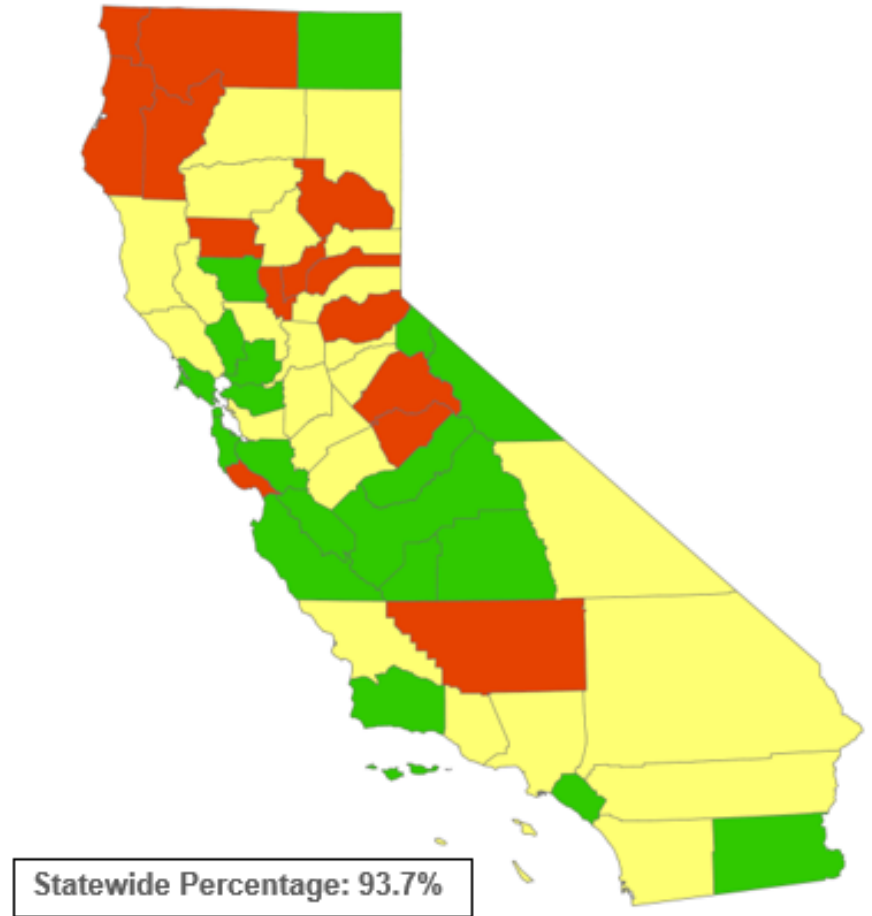


Figure 6. Kindergarten Students with Two or More Doses of MMR Vaccine, by School Year and County, 2022-2023 to 2023-2024

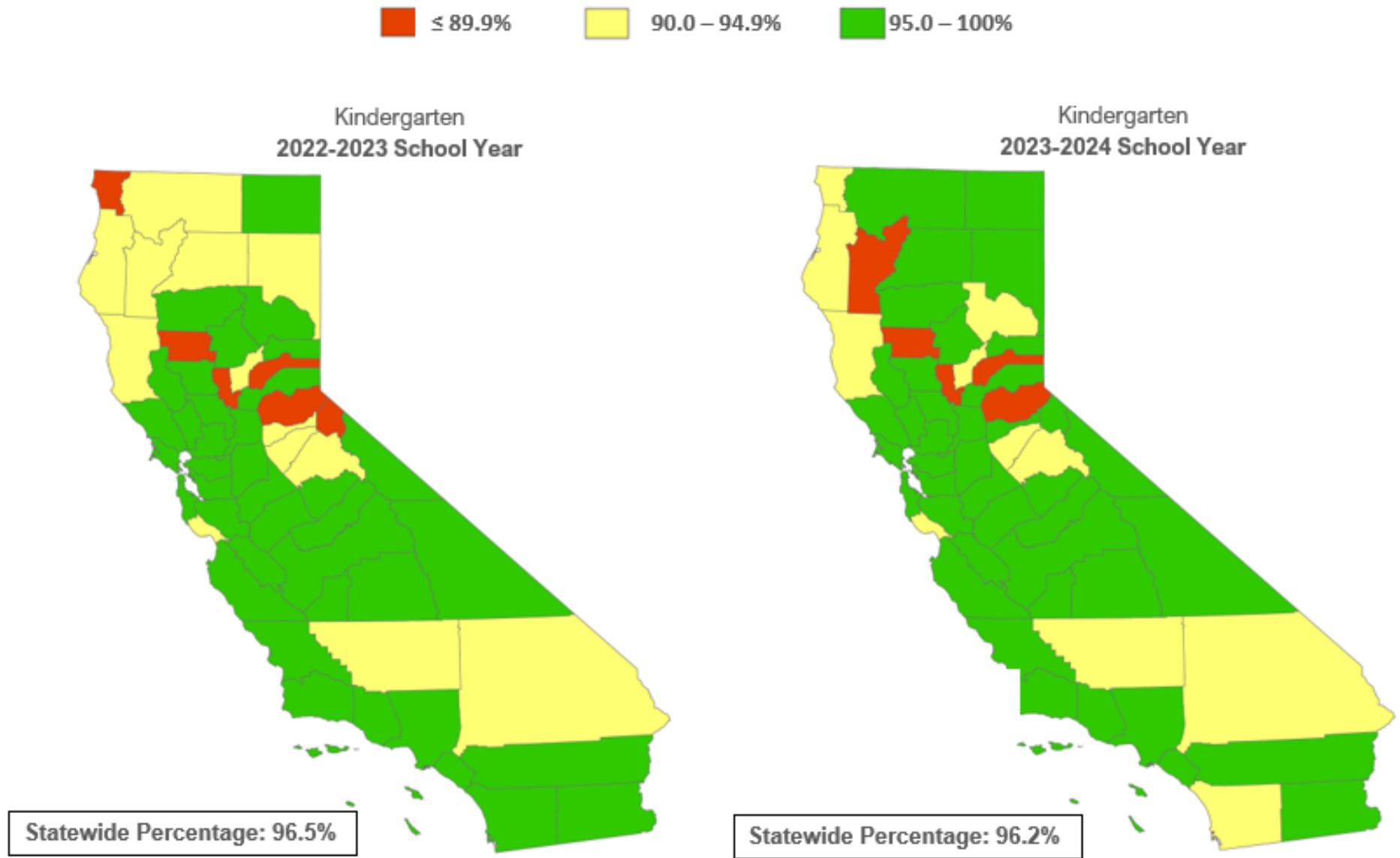


Table 1: Kindergarten Immunization Assessment Summary, 2021-2022 to 2023-2024

	2023-2024			2022-2023			2021-2022		
	All	Public	Private	All	Public	Private	All	Public	Private
Number of Schools Reporting Kindergarten Students	7,953	6,160	1,793	7,990	6,191	1,799	7,824	6,131	1,693
Number of Kindergarten Students	569,680	522,949	46,731	540,864	495,722	45,142	503,722	461,506	42,216
All Required Immunizations	93.7%	93.7%	93.9%	94.1%	94.2%	93.4%	94.0%	94.1%	93.1%
Conditional Entrants	2.0%	2.0%	2.2%	1.6%	1.6%	1.8%	1.3%	1.3%	1.8%
Permanent Medical Exemptions	0.1%	0.1%	0.3%	0.2%	0.1%	0.8%	0.3%	0.2%	1.0%
Personal Belief Exemptions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Others Lacking immunizations†	2.7%	2.8%	0.9%	2.3%	2.4%	1.0%	2.1%	2.2%	0.9%
Overdue^	1.5%	1.3%	2.8%	1.8%	1.6%	2.9%	2.3%	2.2%	3.3%
4+ DTP	95.4%	95.3%	96.0%	95.6%	95.6%	95.4%	95.7%	95.7%	95.3%
3+ Polio	96.1%	96.1%	96.0%	96.3%	96.3%	95.7%	96.2%	96.3%	95.6%
2+ MMR	96.2%	96.2%	95.8%	96.5%	96.6%	95.3%	96.3%	96.4%	95.5%
3+ Hep B	97.2%	97.2%	97.5%	97.3%	97.4%	97.2%	97.3%	97.4%	97.1%
2+ Varicella	95.7%	95.7%	95.7%	96.1%	96.2%	95.0%	96.0%	96.1%	95.3%

* Differences between exact percentages; may vary from the differences between the rounded percentages listed to the left in table.

† Includes students reported as attending independent study who do not receive classroom-based instruction or home-based private schools or receiving IEP services.

^ Overdue for one or more required immunizations.

Table 2: Total Kindergarten Enrollment and Student Immunization Status, 2023-2024

By County*

	Total Students	Students with All Required Immunizations	Conditional Entrants	Students with a Permanent Exemption	Others Lacking Required Immunizations†	Overdue^
	Number	Percent	Percent	Percent	Percent	Percent
State Total	569,680	93.7%	1.5%	0.1%	2.7%	1.5%
Alameda	21,723	93.8%	1.6%	0.1%	0.4%	4.1%
Alpine	12	—*	—*	—*	—*	—*
Amador	402	92.5%	3.7%	0.2%	1.2%	2.2%
Butte	2,953	94.2%	2.9%	0.1%	2.2%	0.6%
Calaveras	488	91.4%	1.8%	0.0%	4.3%	2.5%
Colusa	421	96.2%	1.2%	0.0%	0.2%	2.4%
Contra Costa	16,327	95.6%	2.1%	0.1%	0.9%	1.3%
Del Norte	336	87.5%	1.8%	0.0%	7.4%	3.3%
El Dorado	3,105	78.2%	2.3%	0.1%	18.8%	0.6%
Fresno	19,102	96.1%	1.0%	0.0%	2.3%	0.6%
Glenn	620	79.8%	0.8%	0.0%	18.9%	0.5%
Humboldt	2,028	89.0%	4.3%	0.2%	2.2%	4.3%
Imperial	3,005	95.6%	1.5%	0.0%	0.7%	2.1%
Inyo	225	93.8%	3.6%	0.0%	0.0%	2.7%
Kern	19,037	87.4%	2.4%	0.2%	9.0%	1.1%
Kings	2,818	96.1%	2.8%	0.0%	0.5%	0.5%
Lake	1,005	90.8%	3.7%	0.2%	1.7%	3.6%
Lassen	357	91.0%	4.5%	0.8%	2.2%	1.4%
Los Angeles	129,630	94.4%	2.1%	0.1%	1.4%	2.0%
Madera	2,954	95.9%	2.0%	0.0%	1.4%	0.7%
Marin	3,334	96.5%	1.8%	0.2%	0.5%	0.9%
Mariposa	150	86.0%	8.7%	0.0%	2.7%	2.7%
Mendocino	1,265	91.5%	2.3%	0.2%	0.9%	5.1%
Merced	5,589	94.7%	2.5%	0.0%	1.4%	1.4%
Modoc	102	97.1%	2.0%	0.0%	0.0%	1.0%
Mono	161	96.9%	1.9%	0.6%	0.0%	0.6%
Monterey	6,810	96.9%	1.7%	0.0%	0.2%	1.1%
Napa	1,782	96.8%	1.2%	0.0%	1.1%	0.8%
Nevada	973	84.3%	4.0%	0.3%	10.7%	0.7%
Orange	43,911	95.6%	1.6%	0.1%	1.9%	0.8%
Placer	7,189	93.5%	2.8%	0.1%	2.1%	1.4%
Plumas	189	87.3%	7.9%	0.0%	3.2%	1.6%
Riverside	39,300	93.4%	2.3%	0.1%	3.4%	0.8%
Sacramento	23,147	93.1%	3.1%	0.3%	2.6%	1.0%
San Benito	1,176	96.6%	2.0%	0.0%	0.5%	0.9%
San Bernardino	35,570	90.5%	2.6%	0.1%	5.1%	1.8%
San Diego	48,838	92.7%	1.9%	0.1%	4.8%	0.5%
San Francisco	6,488	96.5%	1.2%	0.1%	0.0%	2.1%
San Joaquin	13,528	94.0%	1.9%	0.0%	2.4%	1.7%
San Luis Obispo	3,297	94.2%	2.3%	0.2%	1.4%	1.8%
San Mateo	8,907	96.9%	1.0%	0.1%	0.5%	1.5%
Santa Barbara	7,231	97.0%	1.3%	0.2%	1.1%	0.4%
Santa Clara	24,186	96.8%	1.4%	0.2%	0.4%	1.3%
Santa Cruz	3,547	88.7%	1.8%	0.1%	8.6%	0.8%
Shasta	2,835	91.3%	3.8%	0.1%	3.8%	1.0%
Sierra	35	91.4%	8.6%	0.0%	0.0%	0.0%
Siskiyou	577	89.9%	4.2%	0.5%	4.5%	0.9%
Solano	5,822	95.7%	2.2%	0.1%	0.9%	1.2%
Sonoma	6,934	92.7%	2.0%	0.2%	3.5%	1.6%
Stanislaus	9,527	93.8%	2.3%	0.0%	2.3%	1.5%
Sutter	2,441	73.0%	1.5%	0.4%	24.5%	0.6%
Tehama	1,076	94.7%	2.4%	0.2%	0.9%	1.8%
Trinity	145	81.4%	6.2%	0.0%	2.1%	10.3%
Tulare	9,676	96.2%	1.5%	0.0%	1.5%	0.8%
Tuolumne	520	89.8%	2.1%	0.2%	2.9%	5.0%
Ventura	12,437	94.5%	2.0%	0.1%	1.9%	1.5%
Yolo	3,012	94.1%	2.4%	0.2%	2.5%	0.9%
Yuba	1,425	87.7%	0.6%	0.1%	2.9%	8.6%

* Additional precautions for student de-identification are based on jurisdiction enrollment for kindergarten. For jurisdictions with: Fewer than 20 enrollees, the data are omitted; 20-49 enrollees, values of 95% or higher are listed as ≥95%; 50-99 enrollees, values of 98% or higher are listed as ≥98%; 100-499 enrollees, values of 99% or higher are listed as ≥99%.

† Includes students reported as attending independent study who do not receive classroom-based instruction or home-based private schools or receiving IEP services.

^ Overdue for one or more required immunizations.

Table 3: Total Kindergarten Enrollment and Specific Required Immunizations by Series, 2023-2024,
By County*

	Total Students	DTP 4+	Polio 3+	MMR 2+	HepB 3+	Var 2+
	Number	Percent	Percent	Percent	Percent	Percent
State Total	569,680	95.4%	96.1%	96.2%	97.2%	95.7%
Alameda	21,723	96.0%	96.5%	96.4%	97.2%	95.4%
Alpine	12	--*	--*	--*	--*	--*
Amador	402	94.8%	96.5%	96.3%	96.5%	96.3%
Butte	2,953	95.8%	96.7%	96.9%	97.5%	96.4%
Calaveras	488	92.6%	93.2%	93.9%	95.1%	92.6%
Colusa	421	97.6%	98.3%	98.3%	98.8%	97.6%
Contra Costa	16,327	97.3%	97.9%	97.9%	98.6%	97.3%
Del Norte	336	89.9%	92.0%	92.0%	93.5%	92.0%
El Dorado	3,105	79.5%	80.2%	80.3%	82.4%	80.0%
Fresno	19,102	97.3%	97.5%	97.5%	98.0%	97.2%
Glenn	620	80.8%	81.3%	80.8%	83.7%	80.8%
Humboldt	2,028	92.9%	93.2%	92.8%	95.5%	91.9%
Imperial	3,005	97.3%	97.7%	97.9%	98.8%	97.8%
Inyo	225	96.0%	94.7%	95.6%	98.2%	94.7%
Kern	19,037	88.9%	90.3%	90.7%	92.5%	90.1%
Kings	2,818	97.2%	98.2%	98.1%	98.9%	97.2%
Lake	1,005	93.5%	95.0%	95.3%	96.8%	94.7%
Lassen	357	92.2%	94.1%	95.8%	95.5%	95.0%
Los Angeles	129,630	96.3%	96.9%	97.1%	98.2%	96.4%
Madera	2,954	97.2%	98.2%	98.2%	98.4%	97.9%
Marin	3,334	98.3%	98.8%	98.9%	98.8%	98.2%
Mariposa	150	88.0%	90.0%	96.7%	92.7%	94.7%
Mendocino	1,265	94.4%	95.4%	94.9%	96.2%	93.8%
Merced	5,589	96.6%	97.5%	97.5%	98.8%	97.0%
Modoc	102	98.0%	97.1%	≥99.0%	≥99.0%	≥99.0%
Mono	161	98.1%	98.1%	98.1%	98.8%	98.1%
Monterey	6,810	98.3%	98.8%	98.6%	99.2%	98.3%
Napa	1,782	98.7%	99.1%	99.0%	98.5%	98.8%
Nevada	973	88.1%	88.9%	88.7%	90.5%	87.9%
Orange	43,911	96.9%	97.3%	97.4%	98.1%	97.0%
Placer	7,189	95.0%	96.0%	96.3%	96.6%	95.6%
Plumas	189	90.5%	92.6%	92.6%	95.2%	92.1%
Riverside	39,300	94.7%	95.8%	95.8%	96.9%	95.5%
Sacramento	23,147	94.6%	96.0%	96.4%	97.3%	95.8%
San Benito	1,176	97.6%	98.3%	98.5%	99.4%	98.4%
San Bernardino	35,570	92.3%	93.5%	93.5%	95.1%	93.1%
San Diego	48,838	94.1%	94.9%	94.8%	96.4%	94.4%
San Francisco	6,488	98.2%	98.5%	98.4%	98.8%	97.9%
San Joaquin	13,528	95.5%	96.3%	96.3%	97.7%	95.9%
San Luis Obispo	3,297	96.3%	96.5%	96.5%	98.3%	96.1%
San Mateo	8,907	98.2%	98.5%	98.5%	98.8%	98.0%
Santa Barbara	7,231	97.8%	98.1%	98.2%	98.6%	97.9%
Santa Clara	24,186	98.1%	98.7%	98.6%	99.1%	98.2%
Santa Cruz	3,547	91.5%	91.9%	91.8%	94.5%	91.4%
Shasta	2,835	93.2%	94.3%	95.1%	96.5%	95.2%
Sierra	35	91.4%	≥95.0%	≥95.0%	94.3%	≥95.0%
Siskiyou	577	95.1%	95.0%	96.4%	95.8%	95.5%
Solano	5,822	96.9%	97.9%	98.2%	98.6%	97.5%
Sonoma	6,934	94.6%	94.9%	95.0%	95.5%	94.4%
Stanislaus	9,527	95.4%	96.7%	96.6%	97.9%	96.0%
Sutter	2,441	75.4%	76.0%	75.8%	80.3%	75.3%
Tehama	1,076	96.7%	97.4%	97.0%	98.8%	96.3%
Trinity	145	87.6%	89.0%	87.6%	91.0%	86.2%
Tulare	9,676	97.2%	97.7%	97.8%	98.5%	97.5%
Tuolumne	520	91.9%	92.3%	93.1%	95.4%	93.3%
Ventura	12,437	96.2%	96.7%	96.6%	98.0%	96.3%
Yolo	3,012	95.5%	96.3%	96.6%	97.0%	96.0%
Yuba	1,425	89.9%	91.1%	91.6%	94.9%	91.5%

* Additional precautions for student de-identification are based on jurisdiction enrollment for kindergarten. For jurisdictions with: Fewer than 20 enrollees, the data are omitted; 20-49 enrollees, values of 95% or higher are listed as ≥95%; 50-99 enrollees, values of 98% or higher are listed as ≥98%; 100-499 enrollees, values of 99% or higher are listed as ≥99%.

Table 4: Students with 2 or More Doses of MMR Vaccine
 Kindergarten 2021-2022 to 2023-24, 1st Grade 2021-2022 to 2022-23, By County*

	Total Students†	2+ MMR				
		Kindergarten			1st Grade	
		2023-2024	2022-2023	2021-2022	2022-2023	2021-2022
State Total	569,680	96.2%	96.5%	96.3%	97.5%	97.5%
Alameda	21,723	96.4%	97.2%	97.2%	98.4%	98.4%
Alpine	12	--*	--*	--**	--*	--**
Amador	402	96.3%	94.0%	94.1%	94.8%	96.3%
Butte	2,953	96.9%	97.8%	97.9%	98.5%	98.1%
Calaveras	488	93.9%	93.2%	96.4%	96.1%	95.8%
Colusa	421	98.3%	≥99.0%	≥99.0%	≥99.0%	≥99.0%
Contra Costa	16,327	97.9%	97.8%	97.5%	98.6%	98.5%
Del Norte	336	92.0%	89.0%	95.2%	93.7%	96.1%
El Dorado	3,105	80.3%	82.8%	83.6%	84.8%	89.3%
Fresno	19,102	97.5%	97.6%	97.5%	98.4%	98.8%
Glenn	620	80.8%	83.5%	87.4%	87.1%	89.4%
Humboldt	2,028	92.8%	91.4%	91.5%	92.8%	93.7%
Imperial	3,005	97.9%	98.6%	97.2%	98.1%	98.5%
Inyo	225	95.6%	96.1%	95.4%	97.3%	95.2%
Kern	19,037	90.7%	91.9%	91.6%	93.4%	93.5%
Kings	2,818	98.1%	98.6%	98.1%	98.1%	98.7%
Lake	1,005	95.3%	96.8%	97.0%	97.8%	97.9%
Lassen	357	95.8%	93.7%	89.8%	97.4%	94.8%
Los Angeles	129,630	97.1%	96.9%	96.7%	98.1%	98.1%
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Mariposa	150	96.7%	96.6%	97.7%	96.4%	95.9%
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Merced	5,589	97.5%	96.8%	97.4%	98.3%	98.5%
Modoc	102	≥99.0%	≥99.0%	98.0%	≥99.0%	≥99.0%
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Tulare	9,676	97.8%	97.7%	98.2%	98.7%	98.9%
Tuolumne	520	93.1%	90.7%	93.5%	92.7%	93.0%
Ventura	12,437	96.6%	96.9%	97.1%	97.8%	97.8%
Yolo	3,012	96.6%	96.4%	95.8%	97.2%	96.6%
Yuba	1,425	91.6%	93.8%	93.2%	96.8%	96.1%

† 2023-2024 School Year

* Additional precautions for student de-identification are based on jurisdiction enrollment for kindergarten. For jurisdictions with: Fewer than 20 enrollees, the data are omitted; 20-49 enrollees, values of 95% or higher are listed as ≥95%; 50-99 enrollees, values of 98% or higher are listed as ≥98%; 100-499 enrollees, values of 99% or higher are listed as ≥99%.

**Schools did not report