

Vaccination Levels of Fresno County Schools: 2011-2021 School Year

2024



Department of Public Health
Epidemiology, Surveillance, and Data
Management Division

Epidemiology Program

Vaccination Levels for Fresno County Schools: 2011-2021 School Year

This report was produced by:

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Suggested Citation:

Print: Fresno County Department of Public Health, Epidemiology, Surveillance and Data Management Division. (2024). Vaccination Levels for Fresno County Schools: 2011-2021 School Year. Fresno, CA.

Online: Fresno County Department of Public Health, Epidemiology, Surveillance, and Data Management Division. (2024). Vaccination Levels for Fresno County Schools: 2011-2021 School Year. Retrieved from <weblink>

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ABBREVIATIONS & KEY TERMS

Vulnerability Level:

Safest (*Low level concern*): $\geq 95\%$ of students up-to-date on required vaccinations

Moderately vulnerable (*Moderate level concern*): 90-94% of students up-to-date on required vaccinations

More vulnerable (*High level concern*): 80-89% of students up-to-date on required vaccinations

Most vulnerable (*Extreme level concern*): $< 80\%$ of students up-to-date on required vaccinations

DTaP: Diphtheria toxoid, tetanus toxoid, and acellular pertussis vaccine

Fully vaccinated (Kindergarten): Up-to-date on required immunizations- 4 doses of polio vaccine (3 doses if at least 1 dose was received on or after 4th birthday), 5 Dtap/DTP/DT vaccine doses (4 doses if at least 1 dose was received on or after 4th birthday), 2 doses of a Measles-containing vaccine (at least 1 dose must be Measles, Mumps, and Rubella combined and both doses on or after 1st birthday), 3 doses of Hepatitis B vaccine, and 2 dose Varicella vaccine or physician documented Varicella disease

Hep B: Hepatitis B vaccine

MMR: Measles, Mumps, and Rubella vaccine

VAR: Varicella vaccine (Chickenpox vaccine)

Polio: Polio Vaccine

EXECUTIVE SUMMARY

This summary included only schools that have more than 20 students in kindergarten. Schools with fewer than 20 kindergarten students were excluded to maintain confidentiality. This summary included data from school year 2011-12 to 2021-22.

- I. The number of schools with at least 95% of enrolled kindergarteners up-to-date on required vaccinations has increased in the past decade. This percentage rose from below 65% in the 2011-2012 school year to 72% by the 2014-2015 school year. The peak was observed in the 2019-2020 and 2020-2021 school years, with over 90% of schools achieving the benchmark of having at least 95% of kindergarten students up-to-date on all required vaccinations. However, there was a decline to under 85% of schools in the 2021-2022 school year, levels this low have not been seen since before the 2016-2017 school year. Despite this decline, the percentage of schools falling into the most vulnerable category, with less than 80% of students up-to-date on required vaccinations, hit an all-time low in 2021-2022, with less than 1% of schools in this vulnerability category, down from 3% in 2021-2022. Please note, according to the state, data collection on vaccinations could have been impacted by the pandemic.
- II. In more recent years, there has been a decline across required immunization series in the percentage of schools achieving at least 95% compliance among enrolled kindergarteners. Except for the Hepatitis B series, which witnessed an increase in the 2021-2022 school year compared to the previous year, all other series have consistently shown a downward trajectory since either the 2018-2019 or the 2019-2020 school years. The MMR and Varicella series dropped from over 98% of schools in the 2018-2019 school year to below 94%. Similarly, the DTP series declined from approximately 96% to only 91% of schools meeting the 95% of students compliance threshold. Notably, in the 2021-2022 school year, immunization series requiring doses for children between 4-6 years of age fared worse compared to series completed by 18 months of age.

BACKGROUND

Under California legislation (specified in Sections 120325-120375 of the California Health and Safety Code), it's mandatory for children to be vaccinated before they can enroll in childcare, elementary, or secondary schools, as detailed in Appendix A which outlines the vaccination requirements. This requirement extends to all educational institutions covered by this statute, obligating them to both implement these vaccination mandates and keep records of the vaccinations for all students. From January 2016 onwards, exemptions based on personal beliefs are no longer accepted in California (SB 277), though this mandate does not apply to students enrolled in home-based education or independent study programs that do not include classroom-based instruction.^{3,4} Furthermore, the provision of services to students with an individualized education program (IEP) does not depend on their vaccination status.

This report provides an overview of estimated vaccination rates for private and public schools in Fresno County, covering the years 2011 to 2022, with a particular emphasis on the 2021-2022 school year. The focus of this analysis is on vaccination coverage among kindergartners.¹

METHODS AND DATA SOURCES

Under Sections 120325-75 of the California Health and Safety Code, students must show vaccination proof for entry into schools and childcare centers. Furthermore, Sections 120375 of the California Health and Safety Code and Section 6075 of the California Code of Regulations mandate that all educational and childcare institutions annually evaluate and document the vaccination status of their students.

Data for this report was retrieved from the [California Department of Public Health \(CDPH\), Immunization Branch, Shots for Schools website](#). Prior to the 2016-2017 school year, schools with less than 10 kindergarten students enrolled per school year were omitted by CDPH; in 2016-2017 this number was increased to 20 students to protect confidentiality.

Schools were grouped into four categories according to vulnerability level based on the percentage of kindergarten students up-to-date on all required immunizations and specific immunization series (DTP, MMR, Varicella, and Polio): most vulnerable (extreme level of concern), more vulnerable (high level of concern), moderately vulnerable (moderate level of concern), and safest (low level of concern).

The total number of schools included all schools that reported data. Current active schools and closed schools are included for each school year. Over the course of the previous years, there have been a notable number of schools which were permanently closed, temporarily closed or school name changed. All data was included for each year as long as reported to CDPH.

All statistical analyses were conducted in SAS software, Version 9.4 (SAS Institute Inc., Cary, NC).

If you would like to see a map highlighting how well schools are doing in Fresno County and across California, please go to the Shots For Schools' Mapping Tool at <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/School/HowDoing.aspx>

ALL REQUIRED VACCINE TYPE

Table 1: Total number of schools per vulnerability level by school year

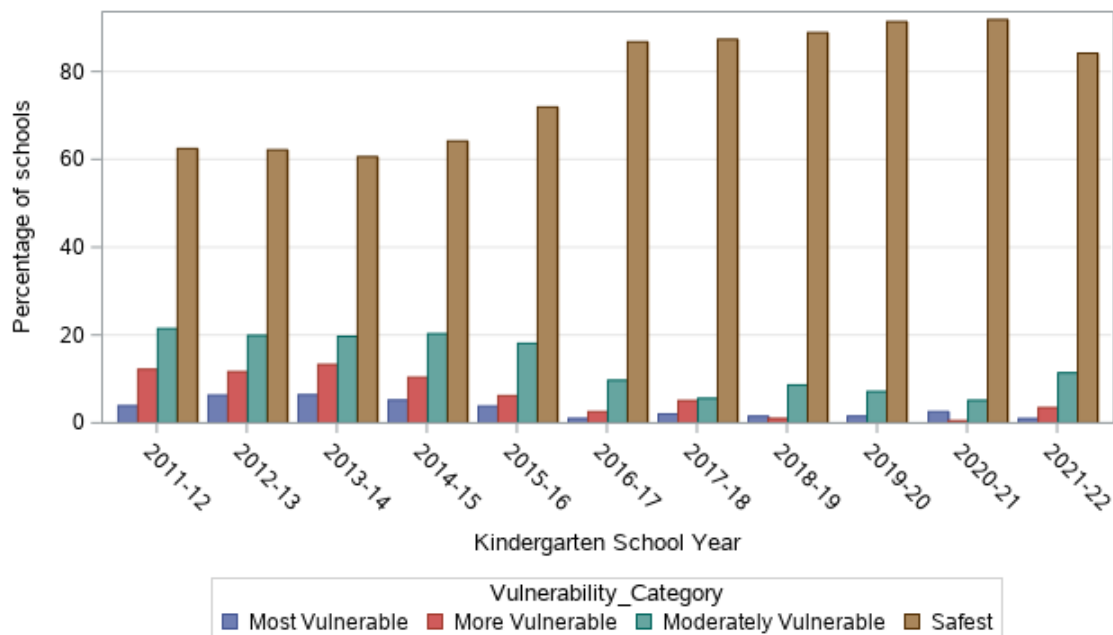
School Year	Most Vulnerable	More Vulnerable	Moderately Vulnerable	Safest	Total Schools
2011-12	8	25	44	128	205
2012-13	13	24	41	128	206
2013-14	13	27	40	123	203
2014-15	11	22	43	136	212
2015-16	8	13	38	151	210
2016-17	2	5	19	170	196
2017-18	4	10	11	172	197
2018-19	3	2	17	175	197
2019-20	3	0	14	179	196
2020-21	5	1	10	179	195
2021-22	2	7	23	170	202

Table 2: Percentage of schools per vulnerability level by school year

School Year	Most Vulnerable (%)	More Vulnerable (%)	Moderately Vulnerable (%)	Safest (%)
2011-12	3.90%	12.20%	21.46%	62.44%
2012-13	6.31%	11.65%	19.90%	62.14%
2013-14	6.40%	13.30%	19.70%	60.59%
2014-15	5.19%	10.38%	20.28%	64.15%
2015-16	3.81%	6.19%	18.10%	71.90%
2016-17	1.02%	2.55%	9.69%	86.73%
2017-18	2.03%	5.08%	5.58%	87.31%
2018-19	1.52%	1.02%	8.63%	88.83%
2019-20	1.53%	0%	7.14%	91.33%
2020-21	2.56%	0.51%	5.13%	91.79%
2021-22	0.99%	3.47%	11.39%	84.16%

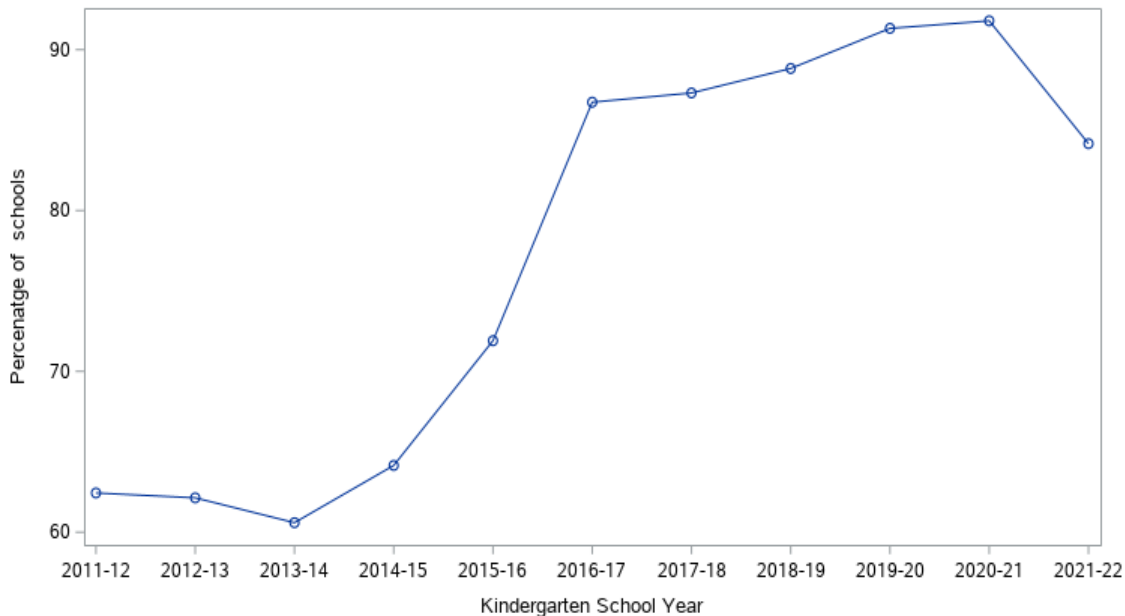
Most vulnerable (<80% of students up-to-date on required vaccinations)
 More vulnerable (80-89% of students up-to-date on required vaccinations)
 Moderately vulnerable (90-94% of students up-to-date on required vaccinations)
 Safest (≥95% of students up-to-date on required vaccinations)

Figure 1: Percentage of Schools with Up-to-date Kindergarten Vaccination by School Year



Most Vulnerable (less than 80.0% of students fully vaccinated).
 More Vulnerable (80-89.9% of students fully vaccinated).
 Moderately Vulnerable (90-94.9% of students fully vaccinated).
 Safest (95-100% of students fully vaccinated).

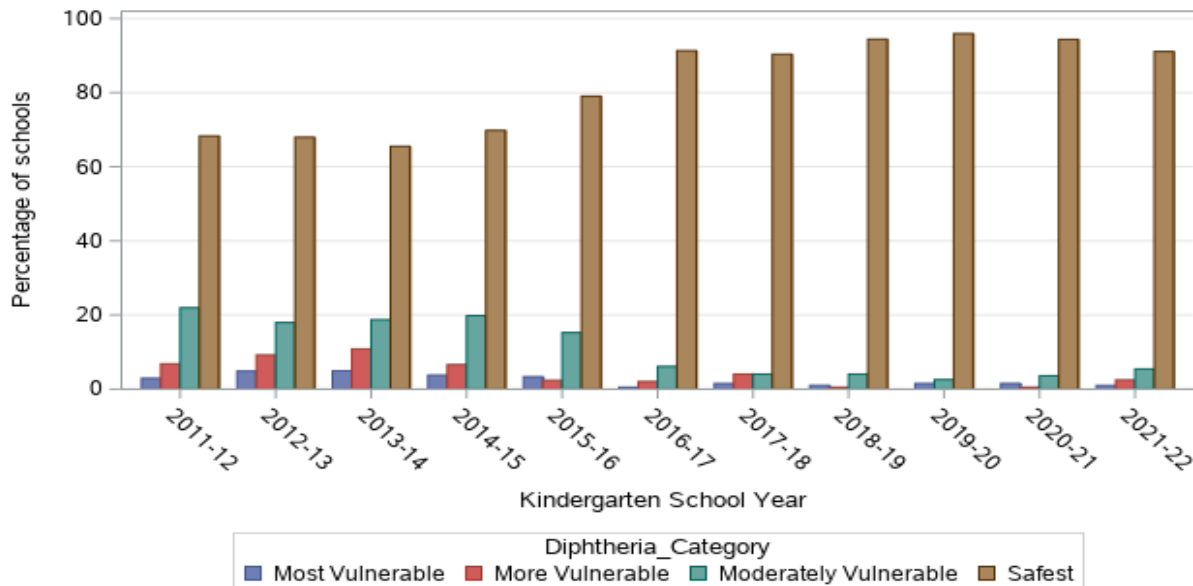
Figure 2: Percentage of schools in the Safest category for Up-to-date Kindergarten Vaccination by school year**



**Safest (95-100% of students fully vaccinated).
 State average for Safest** is 94% for 2021-2022.

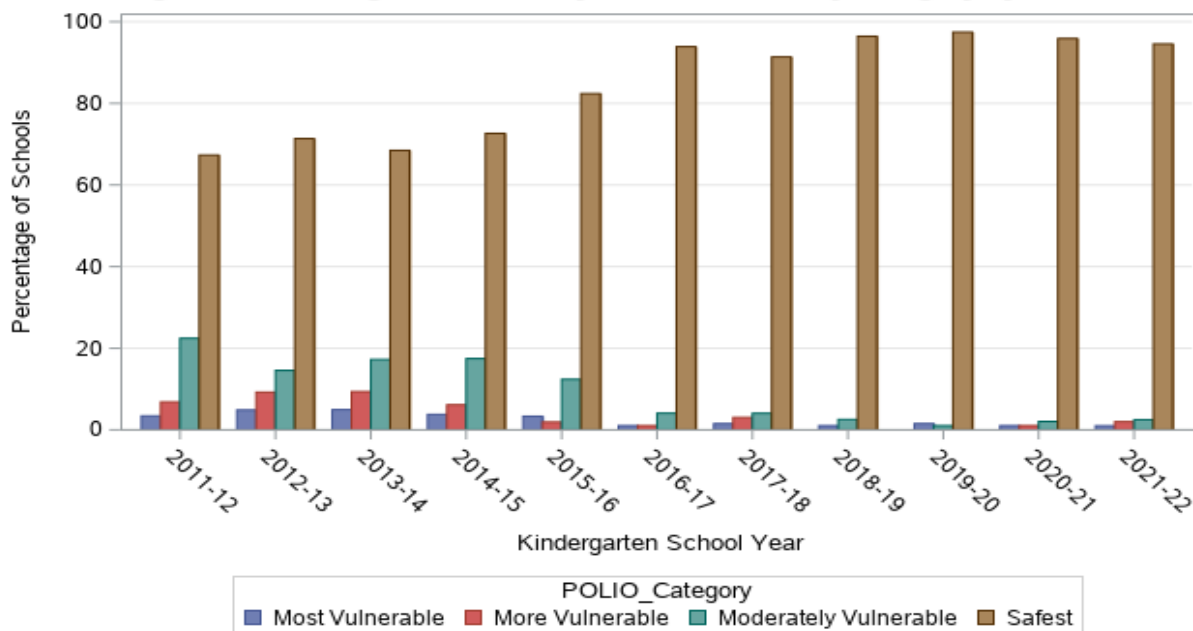
VACCINATION LEVELS BY VACCINE TYPE

Figure 3: Percentage of Schools by Diphtheria, Tetanus, and Pertussis Vulnerability Category by School Year



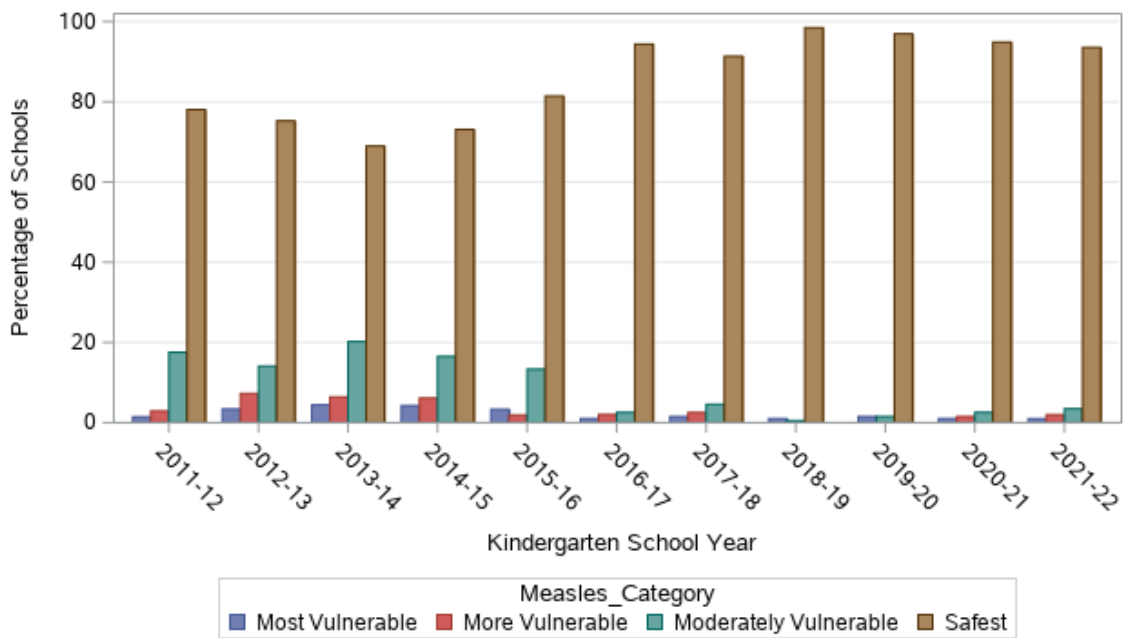
Most Vulnerable (less than 80.0% of students fully vaccinated).
 More Vulnerable(80-89.9% of students fully vaccinated).
 Moderately Vulnerable (90-94.9% of students fully vaccinated).
 Safest (95-100% of students fully vaccinated).

Figure 4: Percentage of Schools by Polio Vulnerability Category by School Year



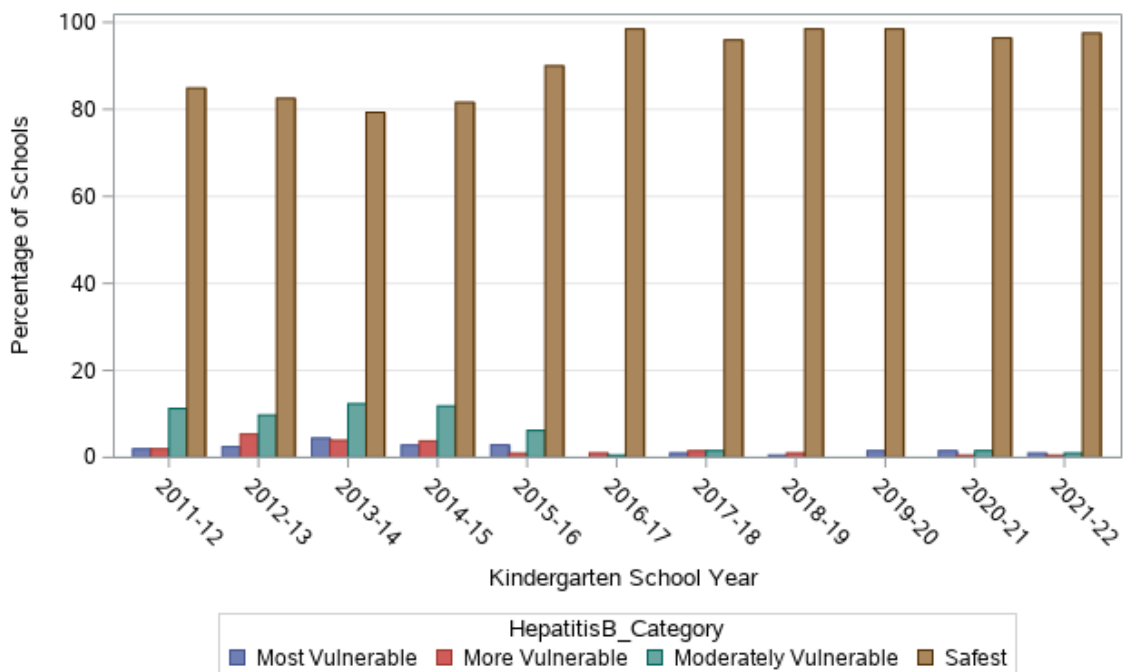
Most Vulnerable (less than 80.0% of students fully vaccinated).
 More Vulnerable(80-89.9% of students fully vaccinated).
 Moderately Vulnerable (90-94.9% of students fully vaccinated).
 Safest (95-100% of students fully vaccinated).

Figure 5: Percentage of Schools by Measles, Mumps and Rubella Vulnerability Category by School Years



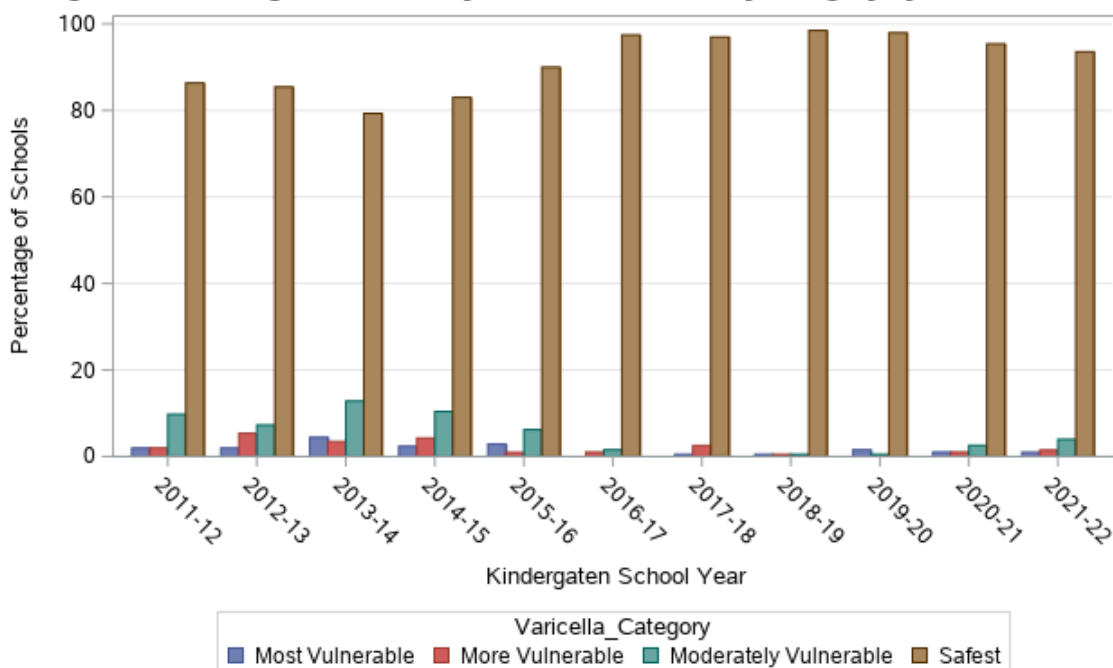
Most Vulnerable (less than 80.0% of students fully vaccinated).
 More Vulnerable(80-89.9% of students fully vaccinated).
 Moderately Vulnerable (90-94.9% of students fully vaccinated).
 Safest (95-100% of students fully vaccinated).

Figure 6: Percentage of Schools by Hepatitis B Vulnerability Category by School Year



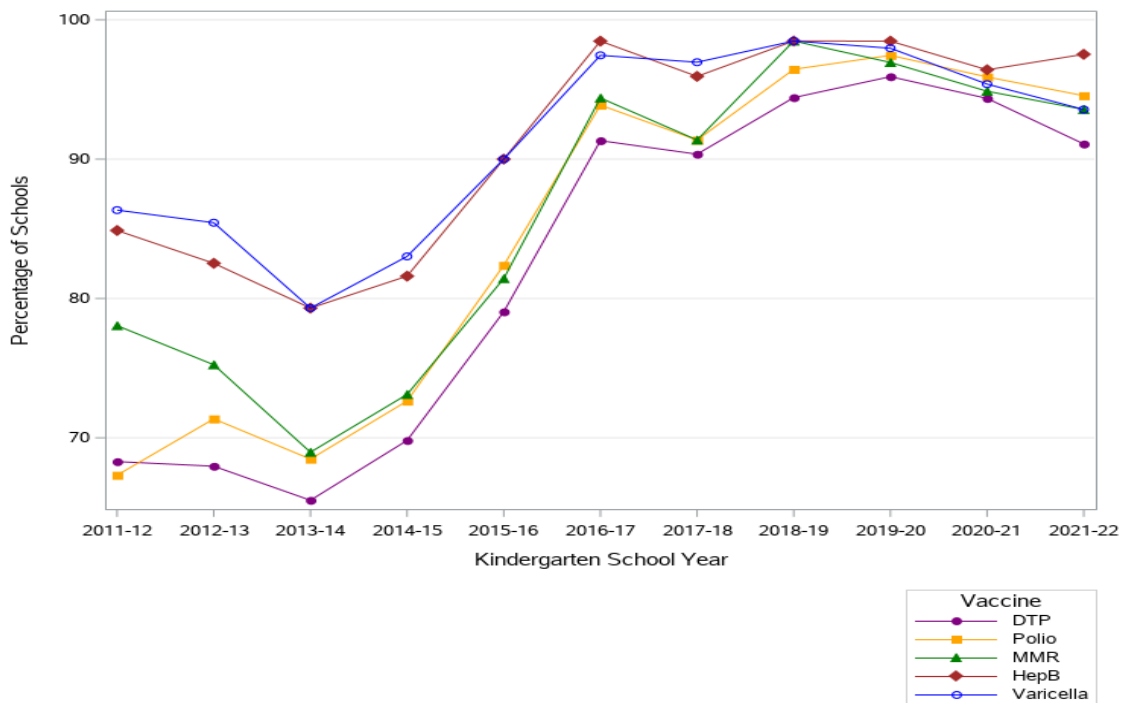
Most Vulnerable (less than 80.0% of students fully vaccinated).
 More Vulnerable(80-89.9% of students fully vaccinated).
 Moderately Vulnerable (90-94.9% of students fully vaccinated).
 Safest (95-100% of students fully vaccinated).

Figure 7: Percentage of Schools by Varicella Vulnerability Category by School Year



Most Vulnerable (less than 80.0% of students fully vaccinated).
 More Vulnerable (80-89.9% of students fully vaccinated).
 Moderately Vulnerable (90-94.9% of students fully vaccinated).
 Safest (95-100% of students fully vaccinated).

Figure 8: Percentage of Schools in the **Safest Category by Vaccine type by School Year



**Safest (95-100% of students fully vaccinated).
 DTP: Diphtheria, Tetanus and Pertussis Vaccine.
 Polio: Polio Vaccine.
 MMR: Measles, Mumps and Rubella Vaccine.
 HEPB: Hepatitis B Vaccine.
 VAR: Varicella Vaccine.

Table 3: Percentage of Schools in the *Safest Category by Vaccine type by School Year

<i>School Year</i>	<i>Category</i>	<i>DTP</i>	<i>Polio</i>	<i>MMR</i>	<i>Hepatitis B</i>	<i>Varicella</i>
2011-12	Safest	68.29	67.32	78.05	84.88	86.34
2012-13	Safest	67.96	73.36	75.24	82.52	85.44
2013-14	Safest	65.52	68.47	68.97	79.31	79.31
2014-15	Safest	69.81	72.64	73.11	81.60	83.02
2015-16	Safest	79.05	82.38	81.43	90	90
2016-17	Safest	91.33	93.88	94.39	98.47	97.45
2017-18	Safest	90.36	91.37	91.37	95.94	96.95
2018-19	Safest	94.42	96.45	98.48	98.48	98.48
2019-20	Safest	95.92	97.45	96.94	98.47	97.96
2020-21	Safest	94.36	95.90	94.87	96.41	95.38
2021-22	Safest	91.09	94.55	93.56	97.52	93.56

**Safest (95-100% of students up-to-date on vaccination)*

The charts show the vulnerability of schools by vaccination rates by vaccine type.

- For the review period, the 2018-2019 school year had the greatest percentage of schools in the 'safest' classification (at least 95% of all registered kindergartens up-to-date) for the MMR, Hepatitis B, and Varicella immunization series. The percentages for DTP and Polio immunization series reached their highest point one year later. Following the 2019-2020 school year, there was a general decline in the percentage of 'safest' schools across all immunization series, except for Hepatitis B, which witnessed an increase again in 2021-2022 [Table 3].
- The Hepatitis B immunization series consistently ranked as one of the top series for the percentage of schools achieving the 'safest' classification when compared to other series [Table 3].
- The Varicella series, while previously ranking in the top two series for percentage of schools achieving the 'safest' classification with Hepatitis B, dropped below the Polio series in the 2020-2021 school year [Table 3].
- The Polio series, which had the lowest percentage of schools achieving the "safest" classification in 2011-2012, improved significantly and became the second-highest series by the 2020-2021 and 2021-2022 school years. [Table 3].
- The DTP vaccination series consistently remained one of the lowest-ranked series throughout the observed period [Table 3].

RECENT SCHOOL YEAR (2021-2022)

Table 4: Number of schools with ≥95% of kindergarten students having all required DTP vaccine doses, Fresno County, 2021-2022 School Year

≥95% of Students	# of schools	%
Yes	184	91.09
No	18	8.91

¹ Schools with <20 Kindergarten enrollees omitted.
² 5 doses of any diphtheria and tetanus toxoids and pertussis (DTP) vaccines including diphtheria and tetanus toxoids, and any acellular (4 doses if 1 dose on/after 4th birthday).

Table 5: Number of schools with ≥95% of kindergarten students having all required Polio vaccine doses, Fresno County, 2021-2022 School Year

≥95% of Students	# of schools	%
Yes	191	94.55
No	11	5.45

¹ Schools with <20 Kindergarten enrollees omitted.
² 4 doses of polio vaccine: oral polio vaccine (OPV) or Inactivated polio vaccine (IPV) or any combination of these (3 doses if 1 dose on/after 4th birthday).

Table 6: Number of schools with ≥95% of kindergarten students having all required MMR vaccine doses, Fresno County, 2021-2022 School Year

≥95% of Students	# of schools	%
Yes	189	93.56
No	13	6.44

¹ Schools with <20 Kindergarten enrollees omitted.
² 2 doses of measles-mumps-rubella vaccine

Table 7: Number of schools with ≥95% of kindergarten students having all required Hep B vaccine doses, Fresno County, 2021-2022 School Year

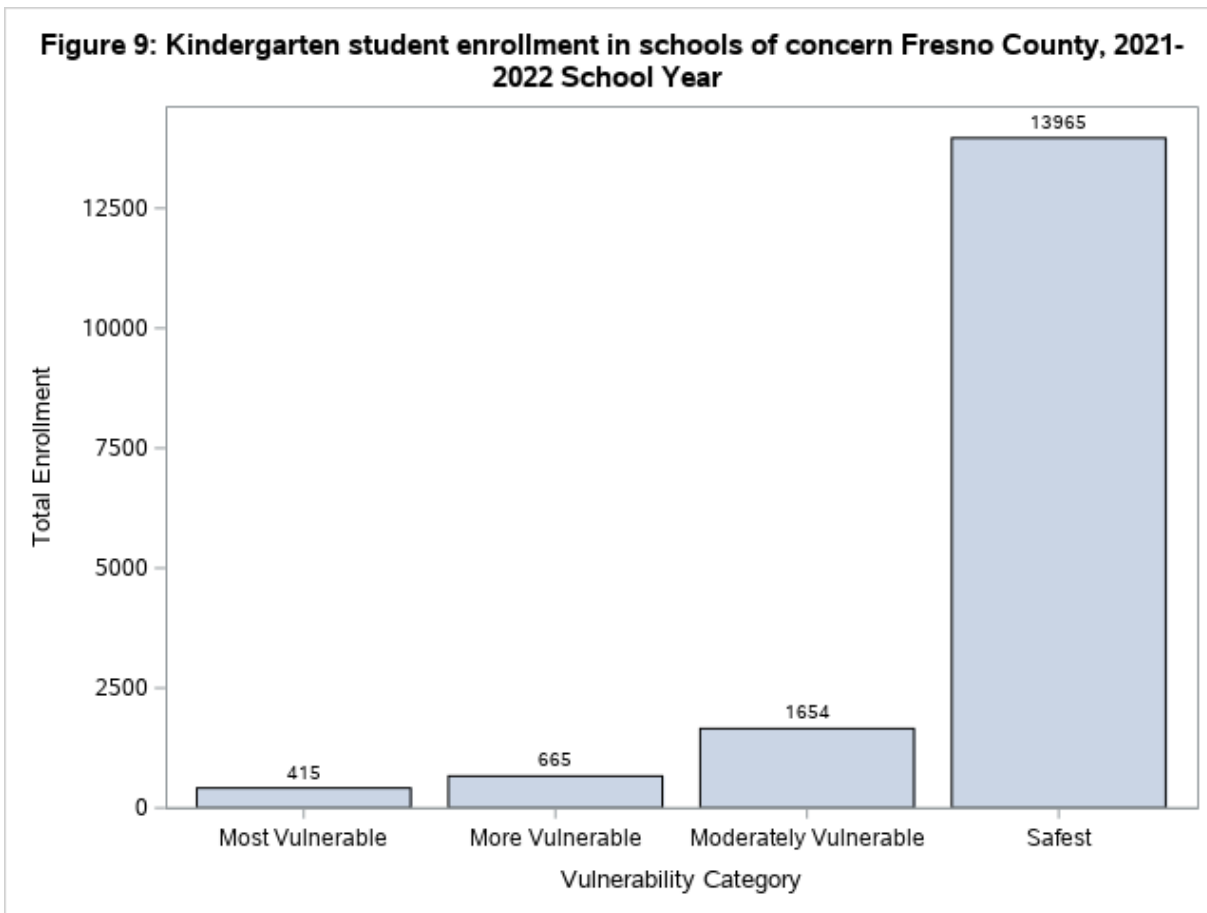
≥95% of Students	# of schools	%
Yes	197	97.52
No	5	2.48

¹ Schools with <20 Kindergarten enrollees omitted.
² 3 or more doses of Hepatitis B vaccine

Table 8: Number of schools with ≥95% of kindergarten students having all required VAR vaccine doses, Fresno County, 2021-2022 School Year

≥95% of Students	# of schools	%
Yes	189	93.56
No	13	6.44

¹ Schools with <20 Kindergarten enrollees Omitted.
² 2 doses of Varicella (VAR) vaccine at or after child's first birthday, unadjusted for history of varicella illness



- For 2021-2022 school year, at least 83.63% kindergartens were enrolled in schools which had a minimum of 95% of all enrolled kindergarten students up-to-date on all required doses of DTP, Polio, MMR, Hepatitis B, and Varicella [Figure 9].
 - 16.37% enrolled in schools with less than 95% of kindergartens up to date with all required vaccination [Figure 9].
- The lowest coverage was for DTP immunization series and the highest was for Hepatitis B [Table 4-8]
 - 91.09% of schools had $\geq 95\%$ of kindergartens up-to-date for all required DTP vaccine doses (requirement 5 doses or 4 if given on or after 4th birthday) [Table 4]
 - 97.52% of schools had $\geq 95\%$ of kindergartens up-to-date for all required Hepatitis B vaccine doses (requirement 3 dose) [Table 7]

APPENDICES

Appendix A: Vaccination Requirements²

K-12 Requirements

In order to begin grades TK/K-12 the following vaccinations are required:

Circumstances	Polio	DTaP, DtP, Tdap, or Td	Hep B	Varicella	MMR
<i>Students Admitted at TK/K-12 Need Record of:</i>					
Kindergarten	4 doses	5 doses	3 doses	2 doses	2 doses on or after 1 st birthday
If one dose given on or after 4 th birthday	3 doses	4 doses			
If one dose given on or after 7 th birthday		3 doses			
<i>Students Advancing to 7th Grade Need Record of:</i>					
7 th grade		1 dose pertussis containing vaccine required on or after 7th birthday	Required at admission to any grade except 7th grade	2 doses	

