

ALLEGHENY COUNTY
HEALTH DEPARTMENT

SCHOOL
IMMUNIZATION
REPORT
2022-2023



ALLEGHENY COUNTY SCHOOL IMMUNIZATION REPORT 2022-2023

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**ALLEGHENY COUNTY HEALTH DEPARTMENT
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Patrick Dowd, Acting Director

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Report prepared by:

Leah Pope, MPH

Applied Epidemiologist
Allegheny County Health Department

Kristen Mertz, MD, MPH

Medical Epidemiologist
Allegheny County Health Department

Please address questions or comments to:

Allegheny County Health Department

Bureau of Data, Reporting, and Disease Control

542 Fourth Ave.

Pittsburgh, PA 15219

412-687-2243

<https://tinyurl.com/ContactDRDC>

EXECUTIVE SUMMARY

To ensure that schools in Allegheny County are complying with state and county immunization regulations, the Allegheny County Health Department (ACHD) requires all schools (public, private, independent, parochial, religious and charter) to submit the immunization status of their students annually.

This report summarizes the immunization data from the 2022-2023 school year. It is organized into five parts: overall immunization status, provisional enrollment, immunization exemptions, immunization status by type of vaccine, and barriers to vaccine coverage. Data are primarily presented by school type, or by grade. Also included are data from previous school years as reference points.

Highlights:

- The percentage of students with all immunizations required for school entry was 95.1 percent in December 2022, meeting the *Healthy People 2020* national goal of 95 percent coverage.
- Grade levels that did not exceed 95 percent complete immunization coverage were kindergarten (94.3%), seventh grade (92.0%), eighth grade (94.6%) and twelfth grade (90.5%). Additional doses of the tetanus, diphtheria, and pertussis (Tdap) vaccine and the meningococcal vaccine (MCV) are required to enter seventh grade, and a second dose of MCV is required to enter twelfth grade.
- The majority of Allegheny County schools (70.6%) had at least 95 percent of their students fully immunized, an increase from the previous school year (65.5%).
- In Allegheny County, 1.6 percent of all students were enrolled without all their immunizations or an exemption (provisionally enrolled) at the time of the survey; kindergarten (3.0%), seventh grade (2.9%), and twelfth grade (3.9%) had higher percentages of students enrolled provisionally, due to new or additional immunization requirements upon entering those grade levels.
- Overall, 3.2 percent of students submitted medical or religious/moral exemptions. Students at parochial/religious schools (5.6%) and private/independent schools (3.9%) had the highest percentage of exemptions.

INTRODUCTION

To maintain healthy students and communities, all students enrolled in kindergarten through twelfth grade are required to have the appropriate number of doses of the diphtheria, tetanus, and pertussis (DTaP); hepatitis B; measles, mumps, and rubella (MMR); polio; and varicella vaccines.¹ For students enrolled in seventh grade, two additional vaccines are required at a single dose each: tetanus, diphtheria, and pertussis (Tdap) and meningococcal (MCV4).¹ An additional dose of MCV4 is required for all twelfth graders.²

Provisional enrollment allows students who have at least one dose in a multi-dose vaccine series to start the school year if there is an explicit plan in place for either receiving or scheduling the remaining required doses within the five-day provisional period. If the provisional period expires before the student receives, or is scheduled to receive all required doses, the student is denied admission to school. The provisional period was shortened from eight months to five days beginning with the 2017-2018 school year.

Students may also be admitted to school without being fully immunized if their parents have submitted paperwork for an exemption. Exemptions can be medical, religious, or moral/philosophical, and they do not expire, as provisional enrollment does. Medical exemptions can be obtained for students who have a condition for which a vaccine is contraindicated and must be documented by the student's physician. Religious and moral exemptions are submitted in writing by the student's parent or guardian. Students experiencing homelessness are exempt under the McKinney-Vento Act.

The ACHD requires all schools (public, private/independent, parochial/religious, and charter) to submit data each school year detailing total enrollment, number of students fully immunized, number of students enrolled provisionally, and the number of students with medical or religious/moral exemptions, per Article X of ACHD's Rules and Regulations.¹ The Health Department collects data on every grade to get a comprehensive view of the immunization coverage. The Pennsylvania Department of Health (PADOH) collects data on kindergarten, seventh grade, and twelfth grade students in December from every school in the commonwealth, each year.²

Allegheny County Health Department, *Article X: School Health Immunization*. (Accessed August 31, 2020); available from https://alleghenycounty.us/uploadedFiles/Allegheny_Home/Health_Department/Article-10-School-Immunizations.pdf

² Commonwealth of Pennsylvania, 28 Pa. Code Part III, Ch 23, Subch C §23.86. *School Reporting*. (Accessed July 24, 2018), available from <http://www.pacode.com/secure/data/028/chapter23/subchapCtoc.html>

Vaccines recommended for children by the CDC’s Advisory Committee on Immunization Practices but not required for school entry in Pennsylvania include those for rotavirus, *Haemophilus influenzae* type B, pneumococcal disease, influenza, hepatitis A, COVID-19 and human papillomavirus. The list of required vaccines for school entry varies by state, depending on logistical, political and practical considerations.

This report utilizes data submitted in December 2022³ by Allegheny County schools to summarize the immunization status of students for the 2022-23 school year for required vaccines. The ACHD created and issued the survey in November 2022, with responses due on December 31, 2022. After the due date, reminders by phone and email were sent to schools who had not yet submitted, and school nurses were contacted to correct mistakes. In April 2023, the survey was closed and the data were finalized. The ACHD was responsible for collecting, cleaning and analyzing the data.

³ Data updated as of April 27, 2023

STUDENT IMMUNIZATION COVERAGE IN ALLEGHENY COUNTY

Immunization data were reported for 153,863 students enrolled in 361 Allegheny County schools in December 2022.¹ Of the students at the 361 schools reporting data, a majority (83.6%) attended public schools, with the fewest number of students (3.9%) enrolled in private/independent schools (Table 1).

Table 1. Allegheny County School Enrollment, School Year 2022-2023

School Type	Number of Students Enrolled		Number of Schools	
	N	(%)	N	(%)
Charter	7,778	5.1%	20	5.5%
Parochial/Religious	11,409	7.4%	53	14.7%
Private/Independent	6,053	3.9%	48	13.3%
Public	128,623	83.6%	240	66.5%
Total	153,863	100.0%	361	100.0%

The overall percentage of students with all immunizations required for school entry was 95.1 percent for the 2022-23 school year (Table 2).

Table 2. Immunization Status of All Students, Allegheny County, School Year 2022-2023

Status	N	%
Fully Immunized	146,387	95.1%
Medical Exemption	788	0.5%
Religious Exemption	2,379	1.5%
Moral/Philosophical Exemption	1,730	1.1%
Homeless Exemption	128	0.1%
Provisionally Enrolled	2,386	1.6%
Denied Admission	35	0.02%
Total Enrollment	153,863	100.0%

¹ Five schools in the county did not submit a survey despite four attempts to contact them by phone and email. These schools enrolled approximately 1.0 percent of students in the county.

Most grade levels had high percentages of fully immunized students, with only kindergarten (93.8%), seventh grade (93.2%), eighth grade (94.6%), and twelfth grade (91.4%) falling short of the *Healthy People 2020* goal of 95 percent coverage (Table 3). Kindergarten, seventh, and twelfth grades most likely had lower coverage because they require new or additional immunizations for entry. The percentage of students with complete immunizations (95.1%) was slightly lower than in the previous school year (Table 3). Overall coverage still exceeds 95 percent; however, there has been a downward trend in overall coverage since the 2015-16 school year. Year-to-year variation by grade has been minimal, apart from a drop in twelfth grade coverage from 2016-17 (96.9%) to 2017-18 (92.9%) when the new requirement for a second dose of the MCV vaccine was introduced, and the recent drops in seventh and twelfth grade coverage from 2019-20 to 2020-21 when many schools switched to virtual learning due to the COVID-19 pandemic.

Table 3. Percentage of Fully Immunized Students by School Year and Grade, Allegheny County, 2014-2015 SY to 2022-2023 SY

Grade	April 2015	April 2016	April 2017	December 2017	December 2018	December 2019	December 2020	December 2021	December 2022
	%	%	%	%	%	%	%	%	%
K	94.3	94.9	94.9	96.4	95.8	95.8	94.2	94.3	93.8
1st	96.3	96.2	96.8	96.7	97.1	96.7	96.8	96.1	95.5
2nd	96.9	96.8	96.4	97.3	97.0	97.2	96.6	96.7	96.0
3rd	96.9	96.9	96.8	96.6	97.3	97.0	97.3	96.5	96.3
4th	97.1	97.2	97.0	97.1	96.9	96.9	96.9	97.0	96.3
5th	97.3	97.0	97.2	96.9	97.3	96.7	97.1	96.8	96.4
6th	97.4	97.2	97.3	97.3	97.2	97.1	96.7	96.8	96.5
7th	96.4	96.2	94.8	95.9	95.6	95.7	91.4	92.0	93.2
8th	96.7	96.7	96.4	96.5	96.6	96.4	96.2	94.3	92.5
9th	96.5	96.8	96.2	96.4	96.1	95.9	96.4	95.5	95.0
10th	97.3	96.6	96.2	96.0	96.5	96.6	96.2	96.2	95.7
11th	97.3	97.2	96.1	96.3	96.8	96.9	96.4	96.0	96.3
12th	97.2	97.2	96.9	92.9	93.3	93.4	89.6	90.5	91.4
Total	96.7	96.7	96.4	96.3	96.4	96.3	95.6	95.3	95.1

Schools are classified as charter, parochial/religious, private/independent, or public. Public schools, which account for 66.5 percent of the schools and 83.6 percent of the total students in Allegheny County (Table 1), had 95.6 percent immunization coverage (Table 4). Charter schools also had high complete immunization coverage (95.0%). Both private/independent (91.2%) and parochial/religious schools (91.6%) fell short of meeting the *Healthy People 2020* goal of 95 percent coverage.

During the past several years, public schools and charter schools have consistently reached at least 95 percent complete immunization coverage (Table 4). Parochial/religious schools have not met the 95 percent goal since 2013, while private/independent schools have not met the 95 percent goal since 2016.

Table 4. Percentage of Fully Immunized Students by School Type, Allegheny County, 2014-2015 SY to 2022-2023 SY

School Type	15-Apr	16-Apr	17-Apr	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec
Charter	97.9	98.0	95.6	96.7	97.0	96.4	95.2	95.2	95.0
Parochial/ Religious	94.8	94.8	94.4	94.2	94.8	94.1	93.3	92.5	91.6
Private/ Independent	92.9	95.1	94.6	94.2	92.2	93.0	94.1	91.7	91.2
Public	97.2	96.9	96.7	96.6	96.7	96.7	95.8	95.7	95.6

Overall, 70.6 percent of schools had at least 95 percent coverage (Table 5). This is an increase from the previous school year, when only 65.0 percent of schools met the 95 percent coverage goal, and a decrease from the 2019-20 school year when 77.7 percent of schools had at least 95 percent coverage. At 81.3 percent, public schools had the highest percentage of schools meeting this goal, while parochial/religious schools had the smallest percentage (43.4%).

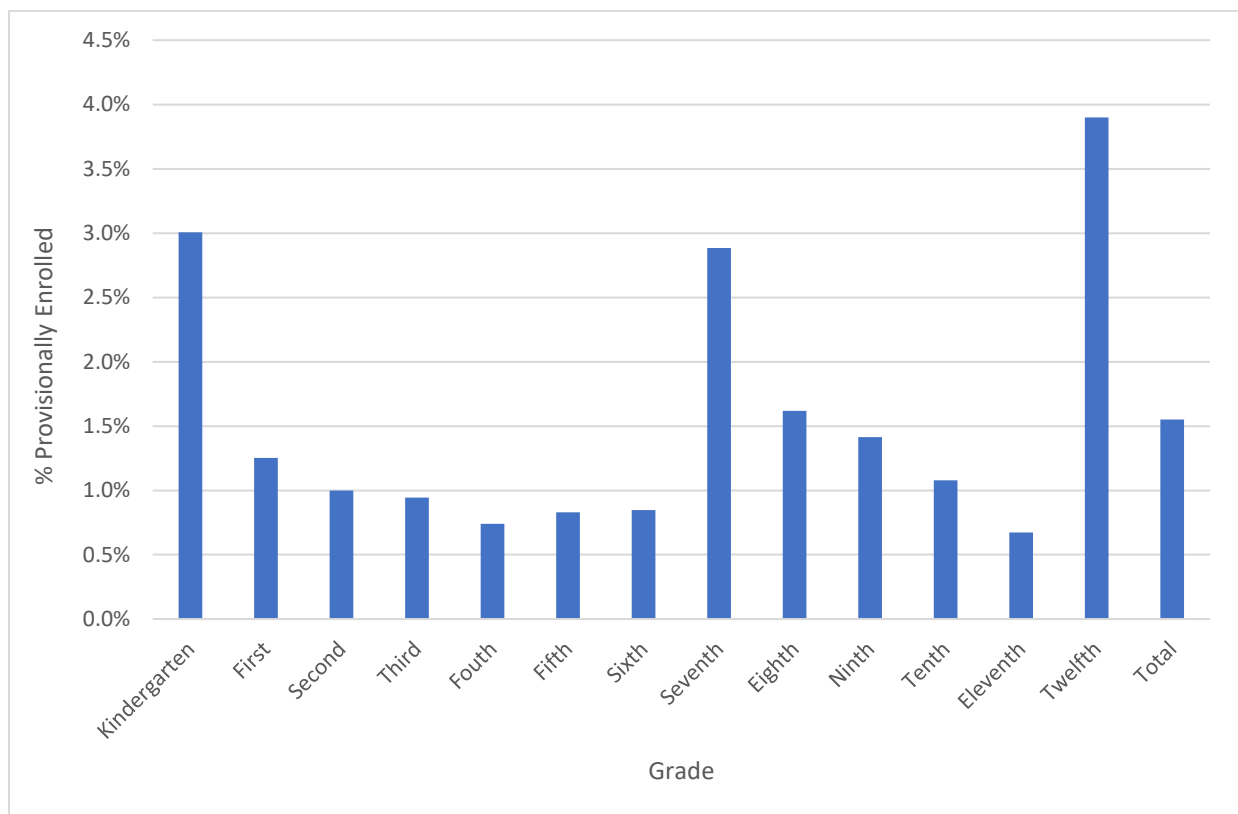
Table 5. Percentage of Schools with >95% Coverage by School Type, Allegheny County, School Year 2022-2023

School Type	Number of Schools	Number of Schools that Met 95% Goal
	N	N (%)
Charter	20	11 (55.0)
Parochial/Religious	53	23 (43.4)
Private/Independent	48	26 (54.2)
Public	240	195 (81.3)
Total	361	255 (70.6)

PROVISIONAL ENROLLMENT IN ALLEGHENY COUNTY

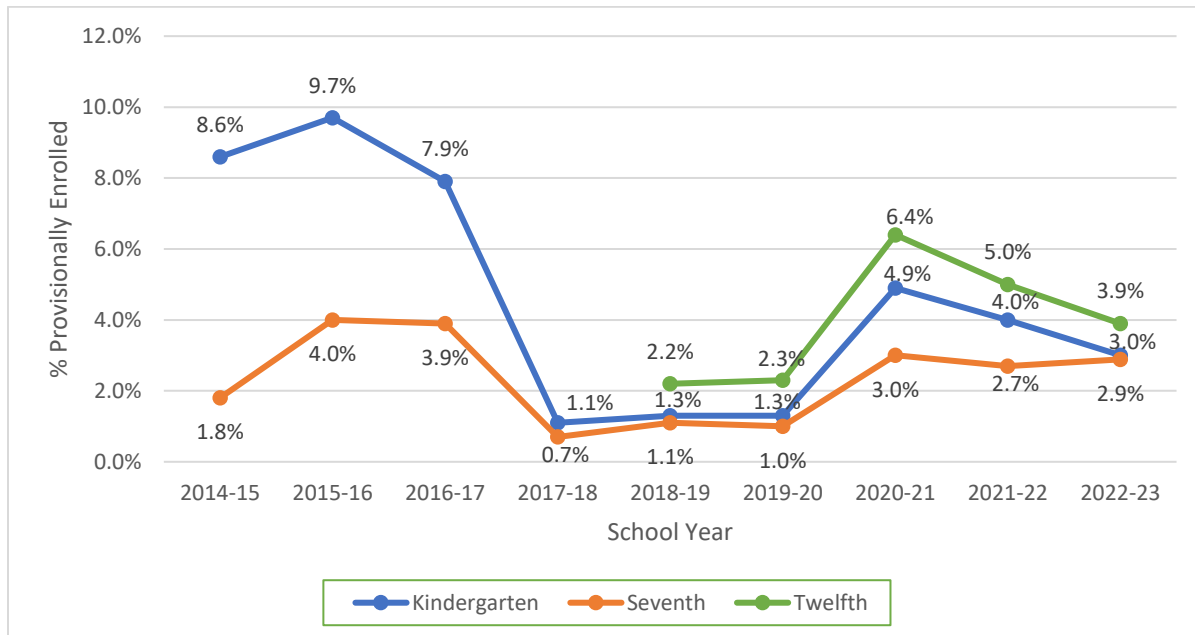
As of December 2022, 1.6% of students in Allegheny County schools were provisionally enrolled. Higher levels of provisional enrollment were seen in kindergarten, seventh, and twelfth grades than others due to additional immunization requirements (Figure 1).

Figure 1: Percentage of Students Provisionally Enrolled by Grade, Allegheny County, 2022-2023



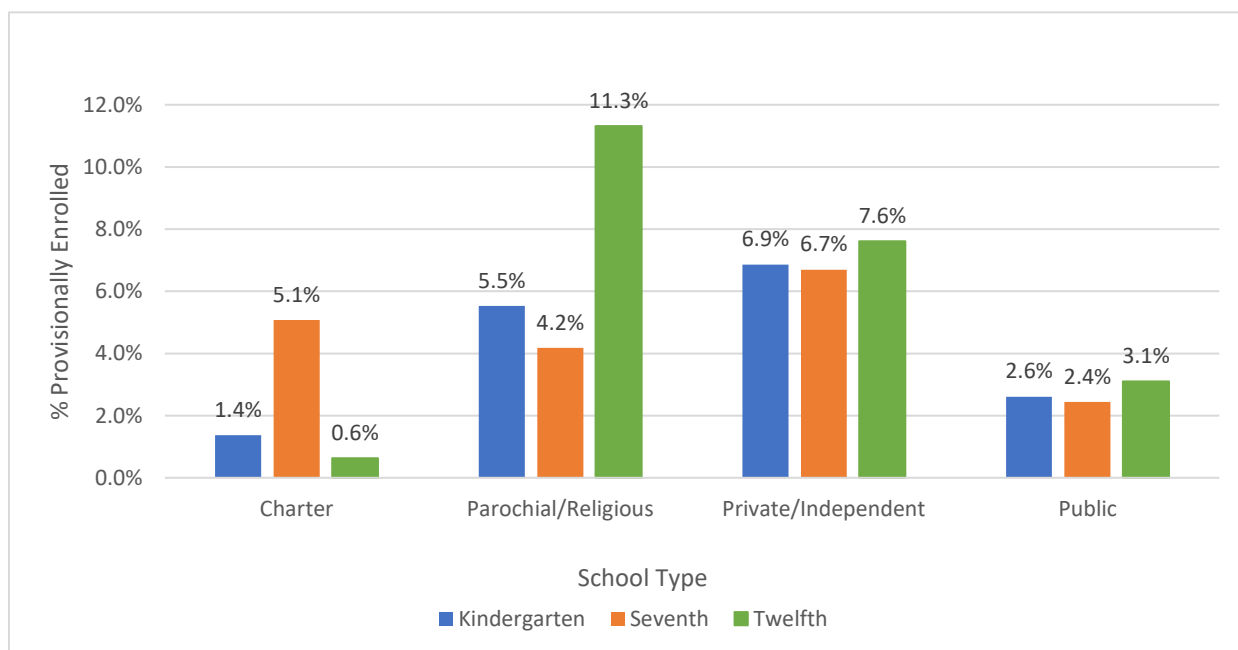
Provisional enrollments in kindergarten and twelfth grade decreased this year compared to last year (Figure 2). Provisional enrollment in seventh grade slightly increased. A large drop in provisional enrollment occurred in 2017-18, most likely because the provisional period was changed. It now ends before the deadline for reporting immunization data. The increase in 2020-21 corresponded to the switch to remote learning in many districts.

Figure 2: Percentage of Provisionally Enrolled Kindergarten, Seventh, and Twelfth Grade Students by Year, Allegheny County, 2014-15 SY to 2022-23 SY



As seen in Figure 3, parochial/religious schools had the highest percentage of provisionally enrolled students in twelfth grade. Private/independent schools had the highest percentage of provisionally enrolled students in kindergarten and seventh grade.

Figure 3: Percentage of Students Provisionally Enrolled by School Type, Allegheny County, 2022-2023



IMMUNIZATION EXEMPTIONS IN ALLEGHENY COUNTY

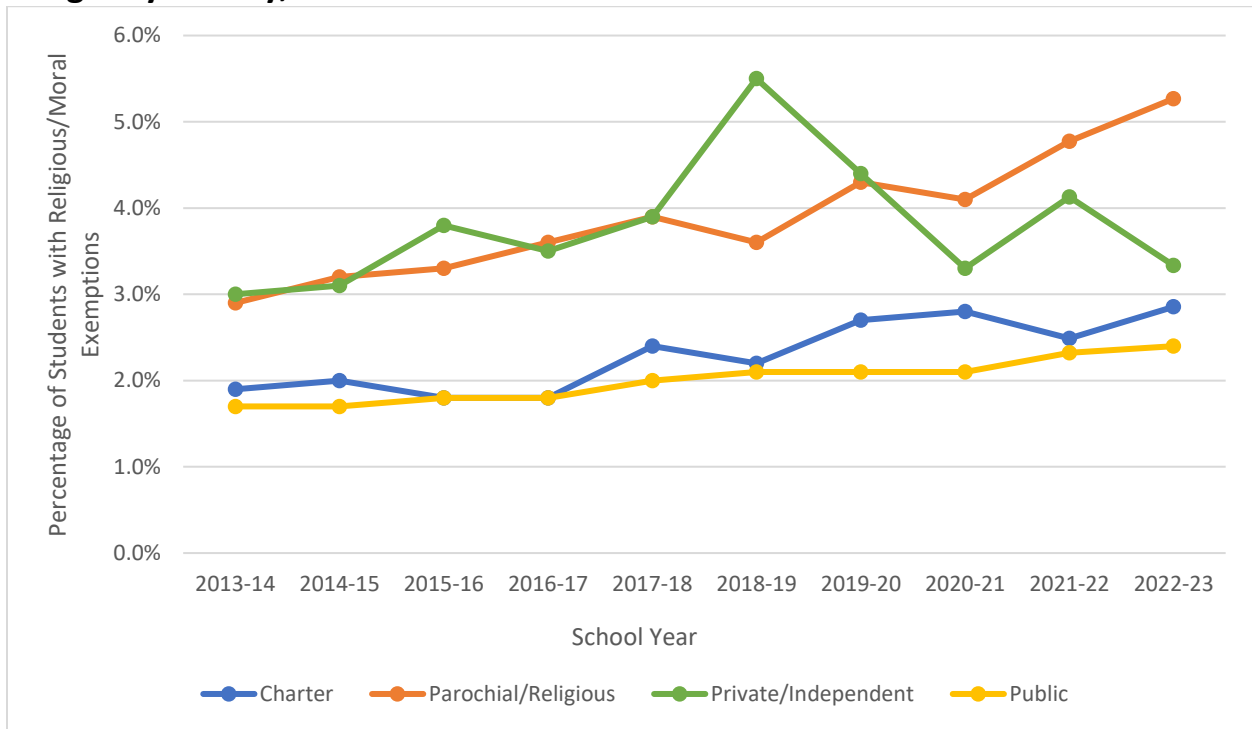
Three percent of students submitted a medical, religious, or moral exemption from being fully immunized by December 2022 (Table 6). The percentage of students with medical exemptions was unchanged from 2021-22 at 0.5 percent. Public schools had the lowest percentage of total exemptions (2.9%), and parochial/religious schools had the highest (5.6%).

Moral/philosophical exemptions (1.1%), and religious exemptions (1.5%) were similar to 2021-22 when they were 1.0 percent and 1.6 percent, respectively, but religious and moral exemptions increased this school year for parochial/religious schools. There was also a slight increase in exemptions for charter and public schools, compared to last year. The number of religious/moral exemptions decreased at private/independent schools (Figure 4).

Table 6: Percentage of Students with Medical, Religious or Moral Exemptions by School Type, Allegheny County, School Year 2022-2023

School Type	Number of Students Enrolled N	Number of Medical Exemptions N (%)	Number of Religious Exemptions N (%)	Number of Moral Exemptions N (%)	Number of Total Exemptions N (%)
Charter	7,778	30 (0.4)	139 (1.8)	83 (1.1)	252 (3.2)
Parochial/Religious	11,409	37 (0.3)	374 (3.3)	227 (2.0)	638 (5.6)
Private/Independent	6,053	37 (0.6)	98 (1.6)	100 (1.7)	235 (3.9)
Public	128,623	684 (0.5)	1768 (1.4)	1320 (1.0)	3772 (2.9)
Total	153,863	788 (0.5)	2379 (1.5)	1730 (1.1)	4897 (3.2)

Figure 4. Percentage of Students with Religious/Moral Exemptions by Year, Allegheny County, 2013-2014 SY to 2022-2023 SY



IMMUNIZATION STATUS BY VACCINE

Kindergarteners in public schools exceeded 95 percent coverage for all five required vaccines (Table 7). Coverage was low among parochial/religious schools, which did not exceed 92.3 percent coverage for any vaccine, and private/independent schools, which did not exceed 92.8 percent.

Except for Tdap coverage at public schools (95.6%), no school type achieved 95 percent coverage among seventh or twelfth grade students for the additional vaccine doses required for school (Table 8). Public schools had the highest coverage among school types, with 95.6 percent of seventh grade students receiving the required dose of Tdap vaccine, and 93.6 percent of twelfth grade students receiving a second dose of MCV4 (Table 9). Parochial/religious schools had the lowest coverage for all vaccines required for entry into seventh and twelfth grades.

Table 7. Percentage of Kindergarten Students Immunized by School Type and Vaccine, Allegheny County, School Year 2022-2023

Vaccine	Charter	Parochial/Religious	Private/Independent	Public
MMR (2)	94.7%	90.5%	91.0%	96.1%
VZV (2)	94.9%	90.0%	91.2%	95.7%
HBV (3)	97.1%	92.3%	92.8%	97.2%
Polio (4)	95.4%	90.4%	91.4%	95.8%
DTaP (4+)	95.4%	90.4%	91.4%	95.8%

Table 8. Percentage of Seventh Grade Students Immunized by School Type and Vaccine, Allegheny County, School Year 2022-2023

Vaccine	Charter	Parochial/Religious	Private/Independent	Public
MCV4 (1 dose)	93.3%	90.0%	90.2%	92.2%
Tdap (1 dose)	93.6%	90.0%	90.0%	95.6%

Table 9. Percentage of Twelfth Grade Students Immunized by School Type and Vaccine, Allegheny County, School Year 2022-2023

Vaccine	Charter	Parochial/Religious	Private/Independent	Public
MCV4 (2 doses)	81.3%	85.1%	86.0%	93.6%

Barriers at Low-Coverage Schools

Of the 361 schools, 32 did not exceed 85 percent coverage among their students. Of the 32 low-coverage schools, 11 (34.4%) were religious/parochial schools, 13 (40.6%) were private/independent schools, 6 (18.8%) were public schools, and two (6.3%) were charter schools. Low-coverage schools had an average school enrollment of 168 students (range of 13 to 702 students), compared to an average of 453 students (range of 5 to 2,084 students) in the higher coverage schools.

To assess barriers to coverage, Health Department staff contacted nurses at these low coverage schools. Nurses at 29 (90.6%) schools responded. School nurses cited parents’ beliefs in vaccine misinformation (34.5%) and difficulties obtaining student vaccination records (41.4%) as the top reasons for their low reported vaccination rate (Table 10). School nurses reported challenges in navigating parents’ beliefs and misconceptions as the major barriers, as well as language barriers, and difficulty obtaining records from parents and doctor’s offices. Over half (58%) of nurses responded that they had no effective method for increasing vaccine coverage when parents held strong beliefs against vaccination, but educating parents, and communicating with a student’s previous school and pediatrician were effective in obtaining records.

ACHD continues to promote vaccination and provide educational messages to the public, as well as offer assistance to school nurses.

Table 10: Main Reasons Cited by School Nurses for Low Vaccination Rates at Schools with Less Than 85% Coverage, Allegheny County, 2022-2023 (N=29)

School Type	Lack of enforcement N	Difficulty Obtaining Records N	Limited Access to Vaccine Providers N	Belief in Vaccine Misinformation N	Religious or Moral Beliefs N
Charter	0	1	0	1	0
Parochial/Religious	1	0	1	2	5
Private/Independent	0	5	2	7	1
Public	2	6	3	0	0
Total	3 (10%)	12 (41%)	6 (21%)	10 (34%)	6 (21%)

SUMMARY

In Allegheny County, overall immunization coverage for the required school vaccinations was 95.1 percent for the 2022-2023 school year, which exceeds the Healthy People 2020 goal; however, there has been a slow downward trend from the 2013-14 school year to the present. The slight decrease in overall coverage from 2019-2020 to 2021-2022 was likely due to the impact of the COVID-19 pandemic, which led to a decrease in well-child visits and preventive healthcare, including immunizations, but coverage continued to decrease in 2022-23 as well.^{5,6}

Overall, 70.6 percent of all schools had at least 95 percent of their students fully immunized. Public schools had the highest percentage of schools (81.3%) with 95 percent coverage, followed by charter schools (55.0 percent of schools), private/independent schools (54.2 percent of schools), and parochial/religious schools (43.4 percent of schools).

The percentage of students with exemptions continues to be low. Medical exemptions were submitted for only 0.5 percent of students and religious/moral exemptions increased slightly from the previous school year to 2.6 percent. Of these, 1.5 percent were religious exemptions and 1.1 percent were moral/philosophical exemptions. Private/independent and parochial/religious schools continue to have the highest percentages of religious and moral exemptions. School nurses report that strong anti-vaccine beliefs make it difficult to ensure students are fully vaccinated, but educating parents could help decrease the number of exemptions.

The high percentages of provisional enrollment for students in kindergarten, seventh, and twelfth grade point to a need to increase immunization efforts before the school year starts. Schools should provide additional information to parents during the summer about immunization requirements for students in these grades. Providers may need to hold additional vaccination clinics before the start of the school year. Overall, provisional enrollments were lower than in most previous school years, but no school type reached the goal of zero provisional enrollments by the December deadline for submitting data. Decreasing the number of students provisionally enrolled when they start school is necessary to protect the health of these students, as well as students who are immunocompromised or otherwise susceptible to vaccine-preventable disease.

Allegheny County's high immunization coverage can be attributed to the hard work and dedication of school nurses, parents, clinicians and public health officials who help ensure students are fully immunized.

⁵ Patel B, Murthy , Zell E, et al. Impact of the COVID-19 Pandemic on Administration of Selected Routine Childhood and Adolescent Vaccinations — 10 U.S. Jurisdictions, March–September 2020. *MMWR Morb Mortal Wkly Rep* 2021;70:840–845. DOI: <http://dx.doi.org/10.15585/mmwr.mm7023a2external> icon.

⁶ Schweiberger K, Patel SY, Mehrotra A, Ray KN. Trends in Pediatric Primary Care Visits During the Coronavirus Disease of 2019 Pandemic. *Academic Pediatrics* 2021. Published May 10, 2021DOI:<https://doi.org/10.1016/j.acap.2021.04.031>