

Immunization Status of School-Age Children in Illinois for School Year 2013-14

**Illinois State Board of Education
Data Analysis and Accountability Division**

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*Gery J. Chico, Chairman
State Board of Education*

*Christopher A. Koch, Ed.D.
State Superintendent of Education*

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Forward

Immunization data are collected annually from Illinois public and nonpublic schools. This report is a compilation of data on the immunization status of school-age children in Illinois for school year 2013-14. The interpretations and conclusions expressed herein are based on the available data and do not necessarily reflect the official position or policy of the Illinois State Board of Education (ISBE). Inquiries regarding this report may be directed to Dr. Marjorie Ribeiro in the Data Analysis and Accountability Division at (217) 782-3950.

Background

As mandated by Section 27-8.1 of the Illinois School Code [105 ILCS 5/27-8.1], all Illinois children must comply with immunization and health examination requirements established by the Illinois Department of Public Health. In addition, the Illinois School Code requires all public and nonpublic schools to submit annually to ISBE completed surveys summarizing the compliance status of enrolled students as of Oct. 15, or as of an earlier date established by the public school district or nonpublic school. This report summarizes the statewide immunization and health examination compliance data. The data submissions used to produce this report are limited to those deemed sufficient by ISBE and approved at an appropriate level by the submitting public school district (for public schools) or nonpublic school.

Methodology

Data collection instruments and procedures used to collect immunization and health examination data were developed by ISBE staff in consultation with staff from the Illinois Department of Public Health. The 2013-14 data collection was conducted using an online system. The online immunization survey must be completed annually by Nov. 15.

Compliance and protection levels for students were calculated based on the information provided by Illinois school officials. School administrators were required to provide information on the total number of children enrolled, the total number of children in compliance, and the total number of children not in compliance for each of the nine disease categories, by grade level. Students were identified as being in compliance with state law if they presented proof of immunizations and/or health examinations, had exemptions for religious or medical reasons on file with the local school authority, or were on an approved schedule for completion of immunizations in a series. Students not in compliance are required to be excluded from school until their health examination and immunization records are in compliance with state law.

Protection levels refer only to immunizations and denote the reported immunity against specific communicable diseases. In order to be counted as fully protected, a student must present proof that the immunization series has been completed and/or present verification of immunity. The Illinois Department of Public Health has determined that a 90% protection level against each disease is recommended in order to prevent epidemics.

The following analysis is conducted with the understanding of compliance versus protection. Percentage of compliance takes the number of students in compliance (i.e., number of students with up-to-date immunization(s), the number of students with religious exemption and the number of students with medical exemption, the number of students with approved schedule for administration of immunization(s), and the number of students in compliance with physical examination requirement only) divided by all students multiplied by 100. Percentage of protection takes the number of students protected and in compliance (i.e., the number of students with up-to-date immunization) divided by all students multiplied by 100.

Limitations

The validity of the data reported is subject to limitations of the aggregate data collection. Data is collected at the school level, but there is a potential for double counting there or at the district level. The current system allows for numerous stakeholders to revise data. For example, one public school district was excluded from this analysis because the public school district was reporting data at the grade level with no designated school.

Furthermore, data analyzed from this data collection portal is limited to the frequency counts provided by schools. Percentages may not equal 100 for all data tables and figures due to rounding. There are plans for moving the current data collection portal into student information systems, which would improve data validity and broaden data analysis; however, key steps are necessary to ensure legal and appropriate systematic measures are taken.

Noncompliance data is collected per disease category and as an actual unduplicated count. Students who are noncompliant per disease category can be counted multiple times per disease. This count does not indicate the number of students missing immunizations. There are students who are noncompliant in more than one disease category who may also need physical examinations. Due to the aggregate nature of the data collection portal, there is potential to duplicate counts in multiple areas.

Data regarding Hib, Tdap, hepatitis B and varicella are also subject to limitation. The protection rate across Hib, Tdap, Hepatitis B and varicella vary per grade level. The immunization for Hib is required for students in pre-kindergarten only; Tdap is for students in grades 6-12; hepatitis B is for students in pre-kindergarten and grades 5-12; and varicella is for students in pre-kindergarten-grade 11.

Another example of the limitation of the current data collection system allowed one public school district to report immunization data for students from kindergarten-grade 12 for Hib; students from pre-kindergarten-grade 5 for Tdap; students from kindergarten-grade 4 for hepatitis B; and students in grade 12 for varicella since 2012. The major limitation is an over reporting of student health data, resulting in inflating compliance per school and district. The 2013-14 report of Hib, Tdap, hepatitis B and varicella data has been corrected by filtering out unnecessary reporting by grades. Future analyses will ensure data reported reflect the grade-specific requirements of immunizations.

School Year 2014 Results

Compliance Data

Statewide Compliance

Table 1 presents the 2013-14 compliance levels for all reported school-age children in Illinois. The compliance level of 2,269,936 reported public and nonpublic school children in Illinois is 97.6%. The data show 55,507 children (2.5% of the total student enrollment) were not in compliance with immunization and/or health examination mandates. Of this number, 44,308 children (2.0% of the total student enrollment) were not in compliance with immunization requirements in at least one disease category, while 11,199 children (0.5% of the total student enrollment) were not in compliance with the health examination requirement only.

Table 1. 2013-2014 Student Enrollment and Compliance Summary of Reported Educational Facilities

Compliance Status	Public Schools		Nonpublic Schools		All Schools	
	Number of Students	Percent	Number of Students	Percent	Number of Students	Percent
Students in Compliance as of Oct. 15, 2013	1,989,022	97.45	225,407	98.51	2,214,429	97.55
Students not in compliance	52,100	2.55	3,407	1.49	55,507	2.45
Immunization requirements	41,610	2.04	2,698	1.18	44,308	1.95
Health examination only	10,490	0.51	709	0.31	11,199	0.49
Students excluded from school as of Oct. 15, or as of an earlier date established by the district or nonpublic school.	14,849	0.73	308	0.13	15,157	0.67
All students	2,041,122	100.00	228,814	100.00	2,269,936	100.00

As of Oct. 15, or as of an earlier date established by a public school district or nonpublic school, 15,157 children were excluded from Illinois schools. The number of exclusions continues to be significantly lower than the actual number of children not in compliance. Part of this can be attributed to transfer students without records. Transfer students cannot be excluded from school, but they must be reported noncompliant because records were not available to document immunization status.

Public School Compliance

For Illinois public schools, the compliance level for the total 2,041,122 reported children is 97.5%. (See Table 1) Of the 52,100 public school children not in compliance, 41,610 children were not compliant in one or more disease category, while 10,490 were not in compliance with the health examination requirement only. The number of students excluded from school as of Oct. 15, or as of an earlier date established by a school district, was 14,849.

Of the 4,366 public schools required to submit data, 223 had compliance levels of less than 90%. There were 439 public schools that did not submit data successfully. Illinois law does not require compliance levels of 90% or greater for individual schools within public school districts.

Nonpublic School Compliance

For Illinois nonpublic schools, the compliance level for the total 228,814 reported children is 98.5%. (See Table 1) Of the 3,407 nonpublic children not in compliance, 2,698 children were not in compliance with immunization requirements in at least one disease category, while 709 children were not in compliance with the health examination requirement only. The number of students excluded from school as of Oct. 15, or as of an earlier date established by a nonpublic school, was 308.

Of the 1,615 nonpublic schools required to submit data, 48 had compliance levels of less than 90%. There were 518 nonpublic schools that did not submit data successfully.

Protection-Levels Data

Statewide Protection

Table 2 displays the numbers and protection-level percentages of all reported students who are fully protected against the diseases of polio, DTP/DTaP/Td, Tdap, measles, rubella, mumps, varicella/chickenpox, hepatitis B and Hib. Varicella/chickenpox, Hepatitis B and Hib protection-level percentages are determined based on the actual number of children required to be immunized. Hepatitis B is required for children in pre-k and grades 5 through 12. Hib is required only for children between 15-59 months of age entering a school program below the kindergarten level (all pre-k students). Varicella/chickenpox was required for all students entering pre-k through grade 11 for the 2013-14 school year.

The 2013-14 protection-level percentages of all reported students are 98.4% for polio; 98.2% for DTP/DTaP/Td; 98.3% for measles; and 98.6% for rubella and mumps. (See Table 2A)

Table 2A. Immunization Status for all Reported Illinois Public and Nonpublic School Statistics, by Disease Category

Immunization Status	Polio		DTP/DTaP/Td		Measles		Rubella		Mumps	
	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total
Protected and in compliance	2,232,864	98.37	2,229,272	98.21	2,231,782	98.32	2,238,633	98.62	2,238,641	98.62
Religious objection	13,078	0.58	13,081	0.58	13,527	0.60	12,683	0.56	12,655	0.56
Medical reasons	2,731	0.12	3,018	0.13	4,207	0.19	2,617	0.12	2,610	0.11
Approved schedule	6,742	0.30	7,734	0.34	6,365	0.28	5,103	0.22	5,106	0.22
Unprotected and in noncompliance	14,506	0.64	16,816	0.74	14,040	0.62	10,885	0.48	10,909	0.48
Total	2,269,921	100.00	2,269,921	100.00	2,269,921	100.00	2,269,921	100.00	2,269,921	100.00

The reported levels of protection for Tdap, varicella/chickenpox, hepatitis B and Hib are 96.1%, 98.6%, 98.7% and 97.0%, respectively, based upon the actual number of children required to be immunized. The reported percentages of students unprotected and not in compliance are 2.2% for Tdap; 0.5% for varicella/chickenpox; 0.5% for hepatitis B; and 1.5% for Hib. (See Table 2B)

Table 2B. Immunization Status for all Reported Illinois Public and Nonpublic School Statistics, by Disease Category

Immunization Status	Tdap Grades 6-12		Varicella/Chickenpox PreK-Grade 11		Hepatitis B PreK & Grades 5-12		Hib PreK	
	Number of Students	% of Total2	Number of Students	% of Total2	Number of Students	% of Total2	Number of Students	% of Total2
Protected and in compliance	1,118,578	96.10	2,083,104	98.55	1,424,430	98.66	111,543	96.96
Religious objection	6,628	0.57	11,639	0.55	6,586	0.46	749	0.65
Medical reasons	2,356	0.20	3,876	0.18	2,293	0.16	163	0.14
Approved schedule	10,328	0.89	4,715	0.22	3,545	0.46	869	0.76
Unprotected and in noncompliance	26,052	2.24	10,336	0.49	6,987	0.48	1,713	1.49
Total	1,163,942	100.00	2,113,670	100.00	1,443,841	100.00	115,037	100.00

Public School Protection

As reported in Table 3, the levels of protection for public school students by disease category are 98.5% for polio; 98.3% for DTP/DTaP/Td; 98.4% for measles; 98.8% for rubella; and 98.8% for mumps. (See Table 3A)

Table 3A. Immunization Status for all Reported Illinois Public School Statistics, by Disease Category

Immunization Status	Polio		DTP/DTaP/Td		Measles		Rubella		Mumps	
	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total
Protected and in compliance	2,009,834	98.47	2,006,080	98.28	2,009,045	98.43	2,015,631	98.75	2,015,643	98.75
Religious objection	10,678	0.52	10,735	0.53	11,038	0.54	10,257	0.50	10,244	0.50
Medical reasons	2,305	0.11	2,631	0.13	3,672	0.18	2,105	0.10	2,086	0.10
Approved schedule	5,288	0.26	6,342	0.31	4,890	0.24	3,707	0.18	3,705	0.18
Unprotected and in noncompliance	13,017	0.64	15,334	0.75	12,477	0.61	9,422	0.46	9,444	0.46
Total	2,041,122	100.00	2,041,122	100.00	2,041,122	100.00	2,041,122	100.00	2,041,122	100.00

The reported levels of protection for Tdap, varicella/chickenpox, hepatitis B and Hib are 96.1%, 98.7%, 98.8% and 97.1%, respectively, based upon the actual number of children required to be immunized. The reported percentages of students unprotected and not in compliance are 0.5% for varicella/chickenpox; 0.5% for hepatitis B; and 1.7% for Hib. (See Table 3B)

Table 3B. Immunization Status for all Reported Illinois Public School Statistics, by Disease Category

Immunization Status	Tdap Grades 6-12		Varicella/Chickenpox PreK-Grade 10		Hepatitis B PreK & Grades 5-12		Hib PreK	
	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total
Protected and in compliance	1,024,221	96.05	1,873,115	98.70	1,281,032	98.80	78,341	97.14
Religious objection	5,676	0.53	9,209	0.49	5,171	0.40	392	0.49
Medical reasons	2,139	0.20	3,151	0.17	1,941	0.15	77	0.10
Approved schedule	9,314	0.87	3,345	0.18	2,501	0.19	473	0.59
Unprotected and in noncompliance	25,012	2.35	8,884	0.47	5,964	0.46	1,362	1.69
Total	1,066,362	100.00	1,897,704	100.00	1,296,609	100.00	80,645	100.00

Nonpublic School Protection

As reported in Table 4, the levels of protection for nonpublic school students by disease category are 97.5% for polio; 97.6% for DTP/DTaP/Td; 97.4% for measles; 97.5% for rubella; and 97.5% for mumps. (See Table 4A)

Table 4A. Immunization Status for all Reported Illinois Nonpublic School Statistics, by Disease Category

Immunization Status	Polio		DTP/DTaP/Td		Measles		Rubella		Mumps	
	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total
Protected and in compliance	223,030	97.48	223,192	97.55	222,737	97.35	223,002	97.47	222,998	97.46
Religious objection	2,400	1.05	2,346	1.03	2,489	1.09	2,426	1.06	2,411	1.05
Medical reasons	426	0.19	387	0.17	535	0.23	512	0.22	524	0.23
Approved schedule	1,454	0.64	1,392	0.61	1,475	0.64	1,396	0.61	1,401	0.61
Unprotected and in noncompliance	1,489	0.65	1,482	0.65	1,563	0.68	1,463	0.64	1,465	0.64
Total	228,799	100.00	228,799	100.00	228,799	100.00	228,799	100.00	228,799	100.00

The reported levels of protection for Tdap, varicella/chickenpox, hepatitis B and Hib are 96.7%, 97.2%, 97.4% and 96.5% respectively, based upon the actual number of children required to be immunized. The reported percentages of students unprotected and not in compliance are 1.1% for Tdap; 0.7% for varicella/chickenpox; 0.7% for hepatitis B; and 1.0% for Hib. (See Table 4B)

Table 4B. Immunization Status for all Reported Illinois Nonpublic School Statistics, by Disease Category

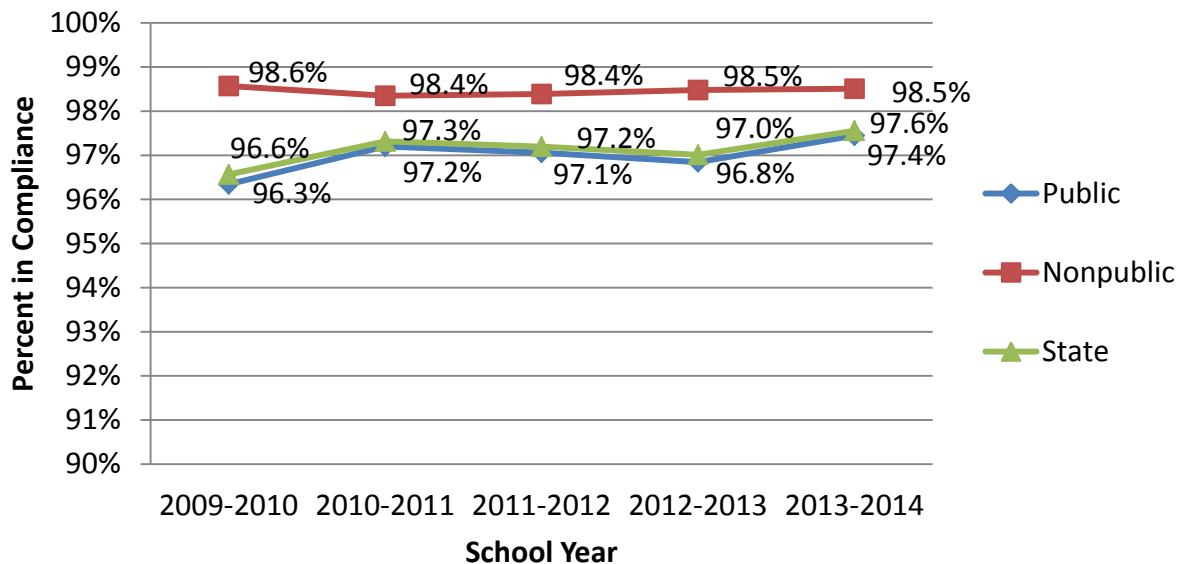
Immunization Status	Tdap Grades 6-12		Varicella/Chickenpox PreK-Grade 10		Hepatitis B PreK & Grades 5-12		Hib PreK	
	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total	Number of Students	% of Total
Protected and in compliance	94,357	96.70	209,989	97.23	143,398	97.40	33,202	96.54
Religious objection	952	0.98	2,430	1.13	1,415	0.96	357	1.04
Medical reasons	217	0.22	725	0.34	352	0.24	86	0.25
Approved schedule	1,014	1.04	1,370	0.63	1,044	0.71	396	1.15
Unprotected and in noncompliance	1,040	1.07	1,452	0.67	1,023	0.69	351	1.02
Total	97,580	100.00	215,966	100.00	147,232	100.00	34,392	100.00

Trends Across School Years 2009-14

Compliance Data

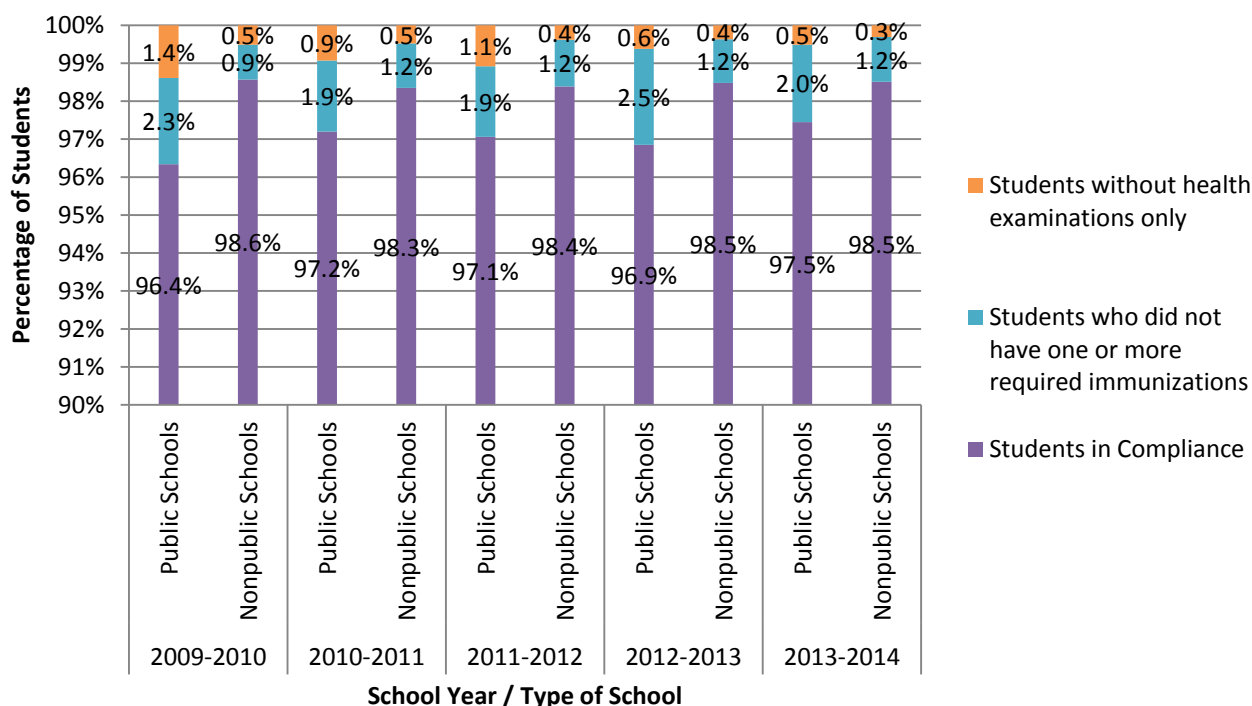
Statewide Compliance

Figure 1: Five-Year Trend in Immunization/Health Examination Compliance Rate



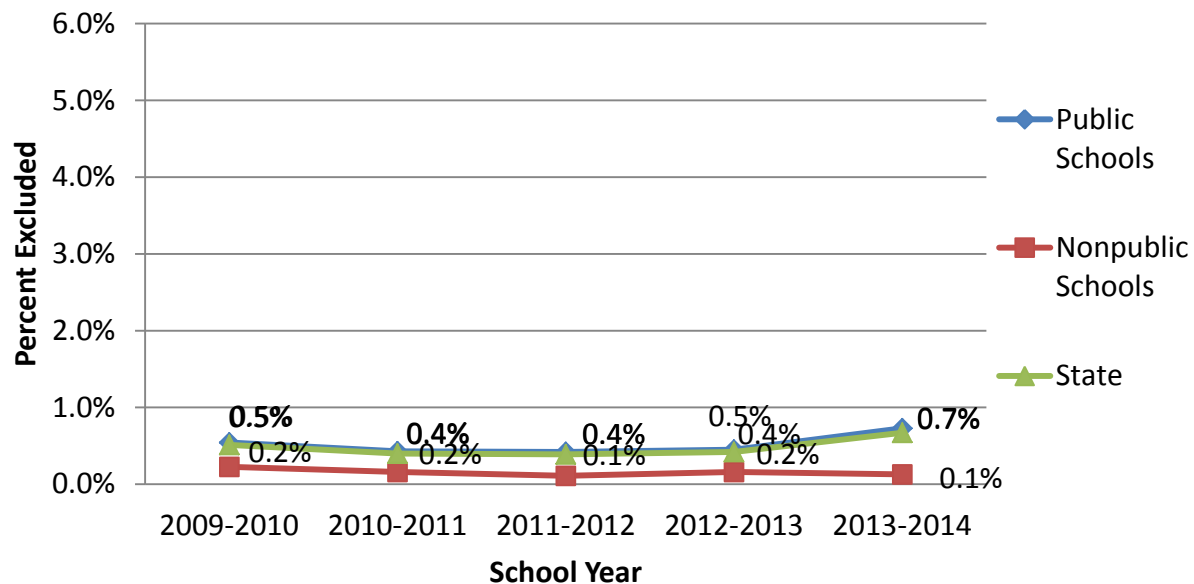
- Since 2009-10, the compliance rate of nonpublic school students remained stable at 98%, which is roughly one percentage point above public schools.
- In 2009-10, the compliance rate of nonpublic school students was 98.6% compared to 96.3% for public school students.
- In 2013-14, the compliance rate of nonpublic school students was 98.5% compared to 97.4% for public school students. Note the rise in public compliance from 96.3 to 97.4 from 2009-10 to 2013-14.

Figure 2: Five-Year Span of Compliance among Public Schools and Nonpublic Schools



- In 2009-10, there were 47,198 public school students (2.3% of the total public enrollment) who did not receive one or more required immunizations in contrast to 28,917 public school students (1.4% of the total public enrollment) who did not complete a health examination only.
- In 2013-14, there were 41,610 public school students (2.0% of the total public enrollment) who did not receive one or more required immunizations in contrast to 10,490 public school students (0.5% of the total public enrollment) who did not complete a health examination only.
- The highest percentage of public school students not in compliance was in 2012-13 when 2.5% of those students did not have one or more immunizations.
- The highest percentage of nonpublic school students not in compliance was 1.2% of those students did not have one or more immunizations.

Figure 3: Five-Year Trend of Students Excluded from Schools Due to Noncompliance to Immunization/Health Exam



- Between the 2009-10 and 2012-13 school years, the number of excluded public school students fluctuated in the 0.5% to 0.4% range, which is about 0.30 percentage points above nonpublic schools.
- However, in 2013-14 there were 14,849 excluded public school students out of 2,041,122 students (0.7% of the total public enrollment).
- Although the 2013-14 figure represents an increase in the number of students not having a physical exam and/or required immunization(s), the percentage of students excluded among all schools in Illinois has remained under 1% based on the various types of compliance status (not compliant due to missing health exam only or not compliant due to one or more missing immunizations).

Protection and Compliance Data

Statewide: Unprotected but Compliant

Figure 4: Five-Year Trend of Students Unprotected but Compliant with Religious Exemptions

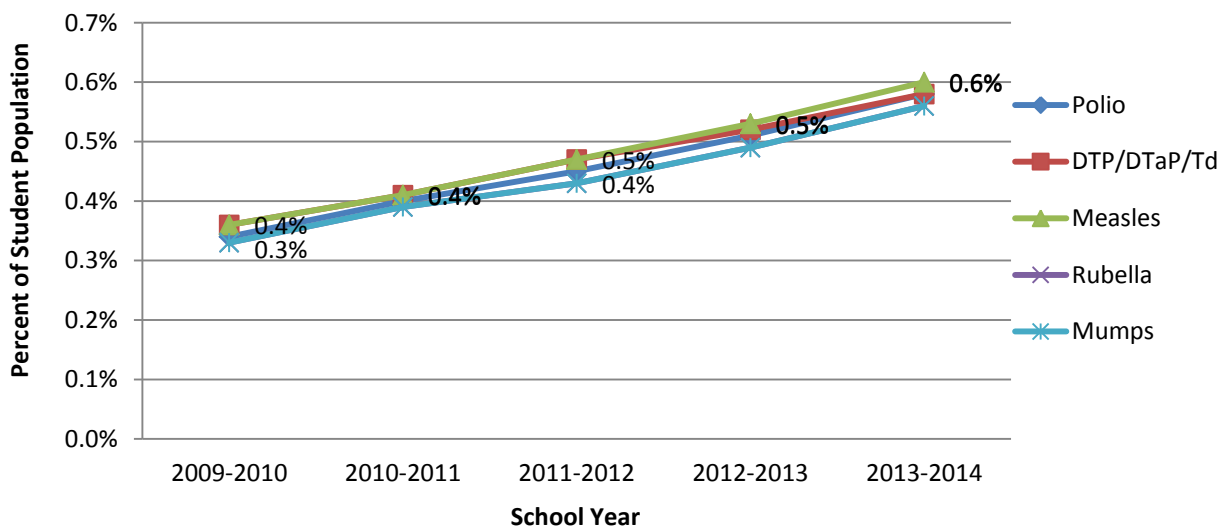


Figure 5: Five-Year Trend of Students Unprotected but Compliant with Approved Schedule

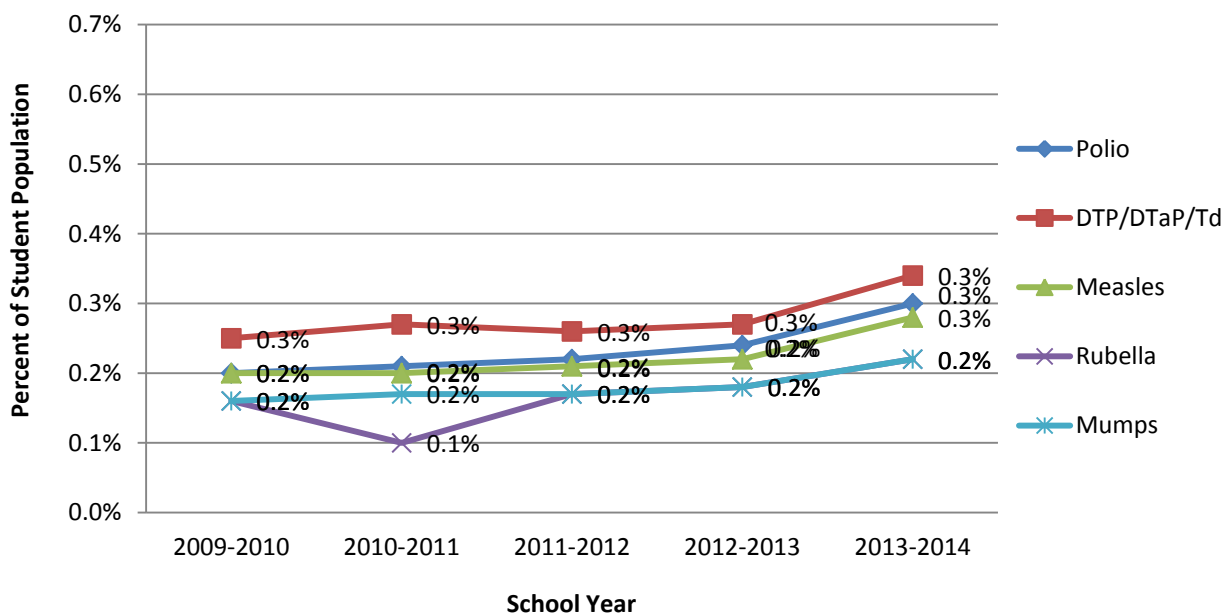
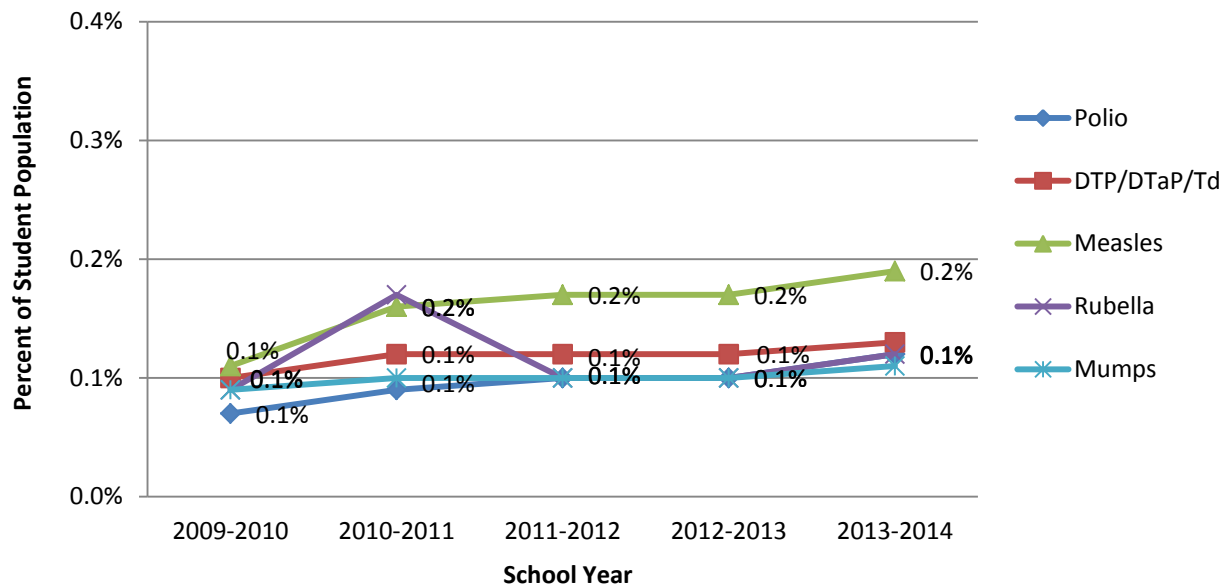


Figure 6: Five-Year Trend of Students Unprotected but Compliant with Medical Exemptions



- In 2013-14, Pre-K-12 students who were not protected but compliant with state law across five diseases included students who opted for religious objections 0.6% (See Figure 4), students who provided approved schedule 0.2%-0.3% (See Figure 5), and students who provided medical exemptions 0.1%-0.2%. (See Figure 6)
- While the percentage of students who cited medical exemptions and approved schedule remained stable across five years, the percentage of students who cited religious objections is incrementally growing at 0.1%-0.2% since 2009-10.

Figure 7: Five-Year Trend of Public School Students Unprotected but Compliant with Religious Exemptions

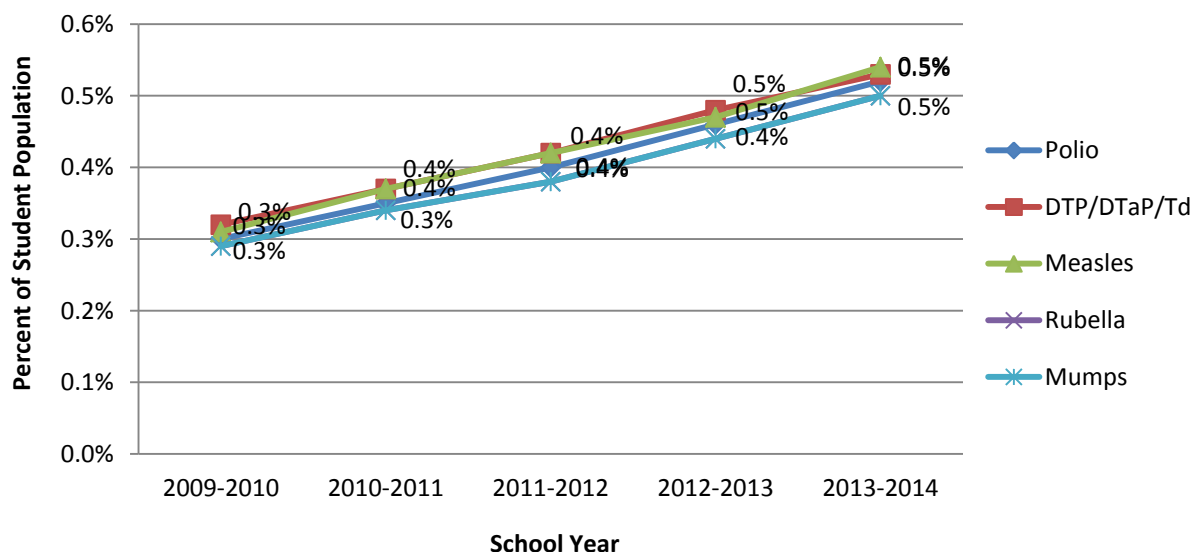
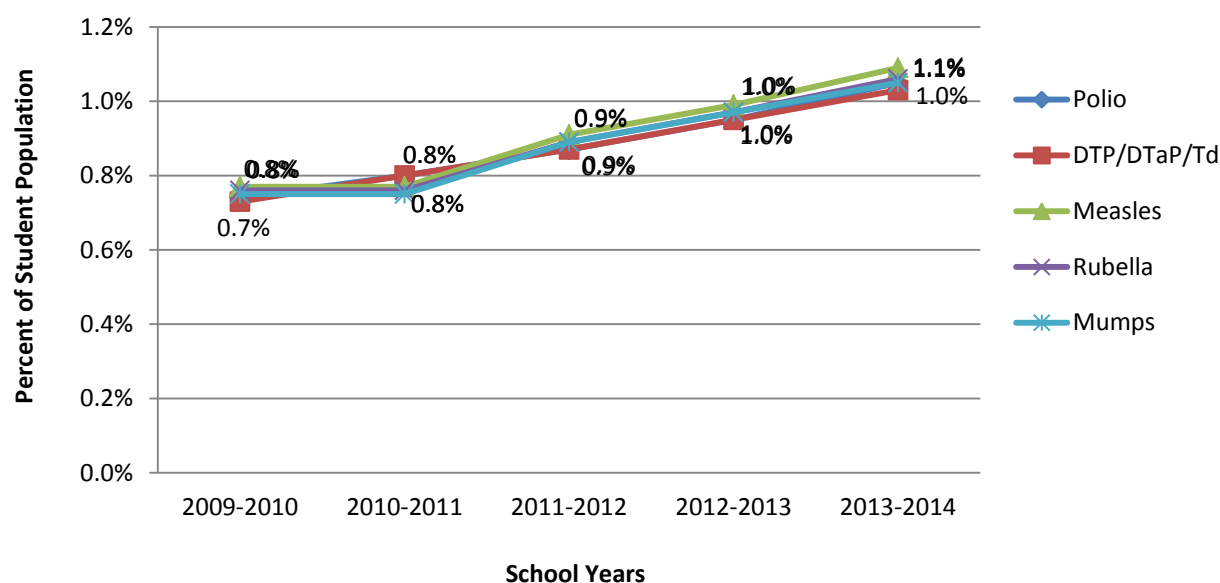
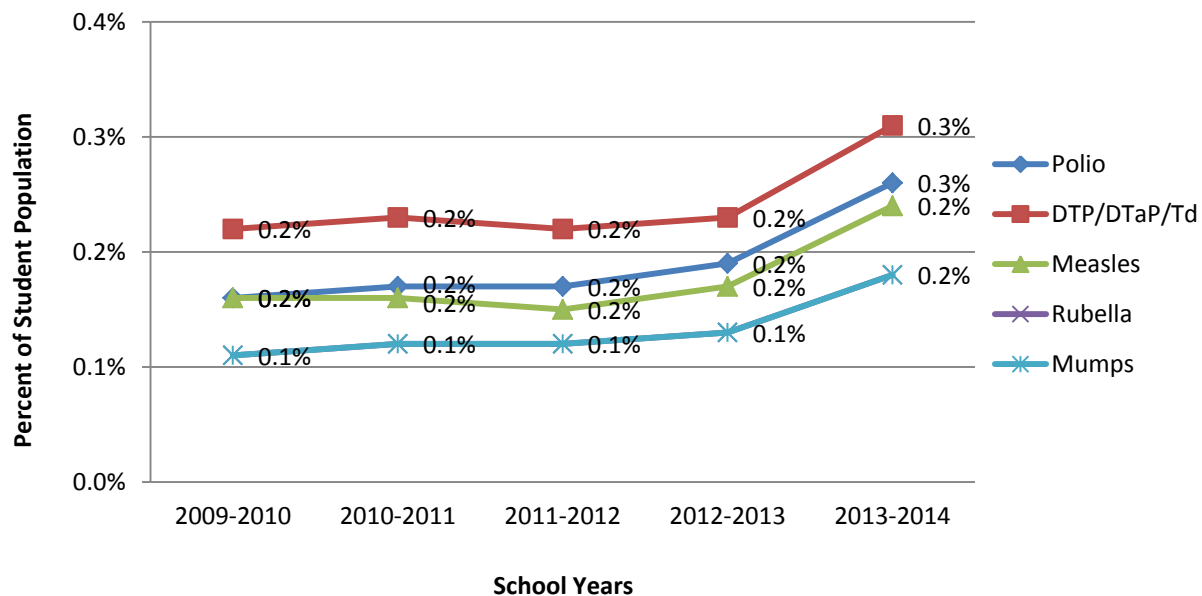


Figure 8: Five-Year Trend of Nonpublic School Students Unprotected but Compliant with Religious Exemptions



- The highest percentage range of students who cited religious objections across five diseases was in 2013-14 with a range of 1.0%-1.1% among nonpublic school students and over 0.5% among public school students.
- The highest percentage of students who cited religious objections in the last five years was measles in 2013-14 with 1.1% of nonpublic school students.
- The high percentage of religious exemptions for measles may indicate parents whose children attend nonpublic schools (i.e., parochial schools) are in conflict about using the MMR vaccine for its composition (<http://www.cdc.gov/vaccinesafety/Vaccines/MMR/MMR.html>).
- The rationale behind the approved schedule for DTP may be that the vaccines require multiple doses over a period of time. Four doses, including a booster after age 4, may prolong compliance to DTP. Refer to the document “Clarification of the Immunization Status of Children and Compliance with State Law” (http://www.isbe.net/research/pdfs/immunization_requirements.pdf).

Figure 9: Five-Year Trend of Public School Students Unprotected but Compliant with Approved Schedule



- The highest percentage of students who provided approved schedules was in 2013-14 with a range of 0.2%-0.3% among public school students.
- The highest percentage of students who provided approved schedules was DTP in 2011-12 with 0.7% of nonpublic school students.

Figure 11: Five-Year Trend of Public School Students Unprotected but Compliant with Medical Exemptions

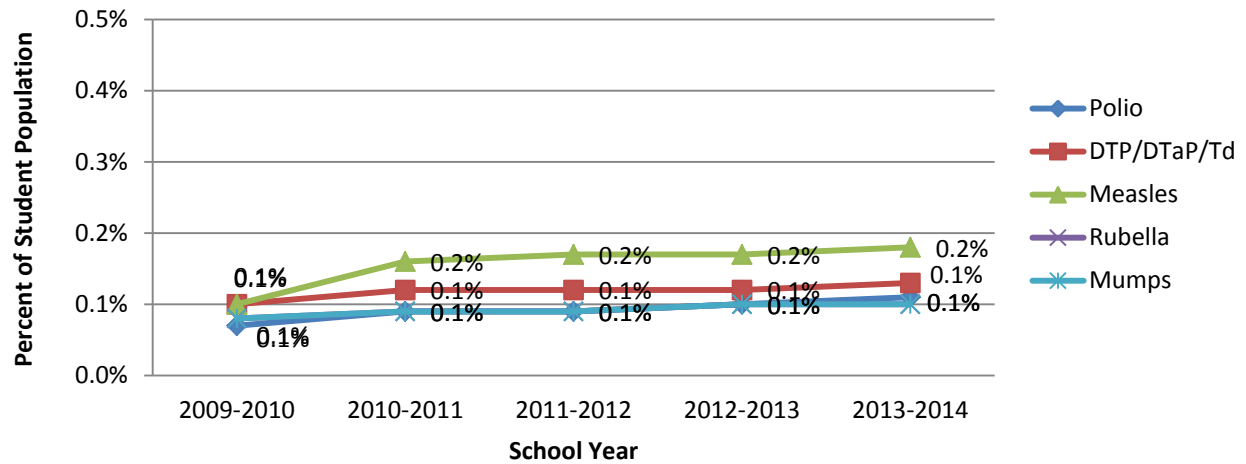
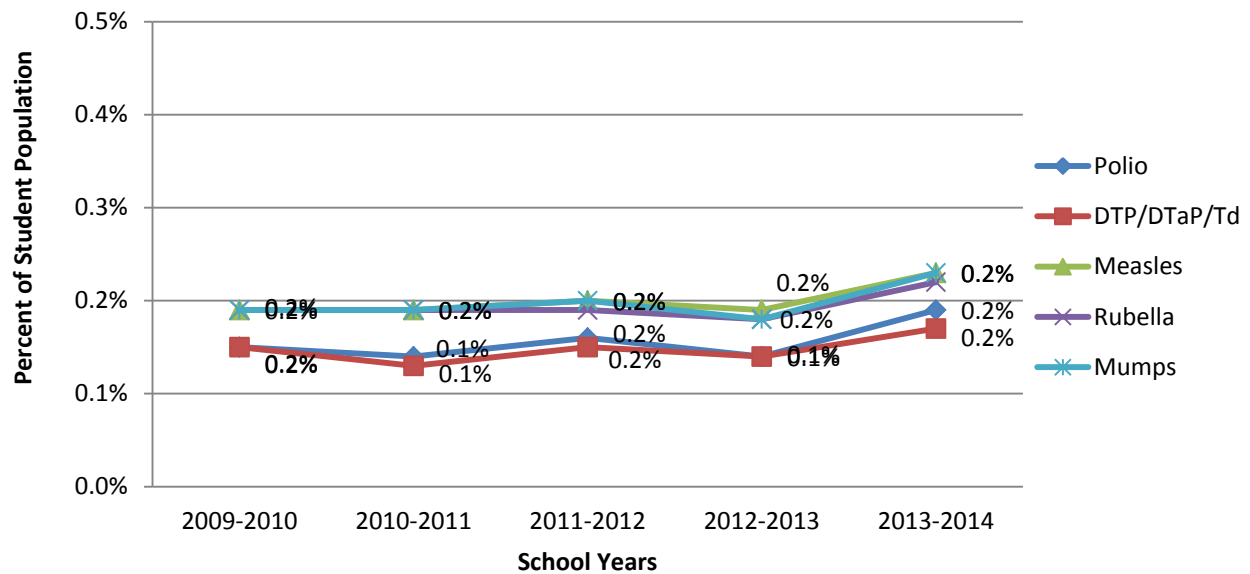


Figure 12: Five-Year Trend of Nonpublic School Students Unprotected but Compliant with Medical Exemptions



- The percentage for exemptions and approved schedules for DTP and measles ranged from 0.1%-0.7% from 2009-13 for students across all schools.
- In 2013-14, students across all schools who were not protected but compliant with state law were 0.6% for DTP religious exemptions; 0.6% for measles religious exemptions; 0.3% for DTP approved schedules; 0.3% for measles approved schedules; 0.1% for DTP medical exemptions; 0.2% for measles medical exemptions.