



## 2015-2016 School Immunization Assessment Results Montana Immunization Program

### **Introduction**

Each fall the annual school immunization assessment is conducted by the Montana Immunization Program to evaluate compliance with Administrative Rule of Montana (ARM) [37.114.720](#). ARM 37.114.720 requires all public and private schools' governing authority or designee to submit the immunization status of all enrolled students. Results from this survey are used to measure vaccination coverage among children enrolled in Montana schools and to identify areas where children may be under immunized.

School vaccination requirements are important for maintaining high levels of vaccination and reducing the occurrence of vaccine preventable diseases among children enrolled in schools. In addition to protecting children who are immunized, vaccinations are necessary to protect children who are unable to receive vaccination for medical reasons. Children who are not vaccinated may be excluded from child care, school, sporting events, or other organized activities during disease outbreaks or as a result of illness.

For the second consecutive year the School Immunization Assessment will include the vaccination status of preschool children. Additionally, the 2015 Montana State Legislature revised the school immunization requirements for attendance to include varicella (chickenpox) vaccination for all students and a pertussis booster vaccine for all students in 7<sup>th</sup> grade and above.

The assessment documents immunization coverage for vaccines required for school entry by ARM [37.114.705](#) including: Diphtheria, Tetanus, Pertussis (DTaP/DTP/Tdap/DT/Td), Polio (IPV), Measles, Mumps, Rubella (MMR) and Varicella (VAR). The number of students without immunization records and the number of students reporting medical or religious exemptions from vaccination are also collected.

Medical or religious exemptions may be submitted in lieu of the required dates of immunization per Montana Code Annotated (MCA) 20-5-405 for students enrolled in preschool–12<sup>th</sup> grade. Medical exemptions may be granted if a child has an allergy to a component of a vaccine or a medical condition that is a contraindication to receiving the required vaccine. The medical exemption form must be signed by a Doctor of Medicine (MD) or a Doctor of Osteopathy (DO) and includes a designated expiration date for the exemption. Religious exemptions require a parent, guardian, or an emancipated minor to complete and sign a religious exemption form in the presence of a notary, stating a religious objection to one or more vaccines, allowing the child to be exempted from vaccine requirements. Religious exemptions must be completed each academic year.

The majority of required vaccines include multiple doses. For students who have received at least one dose of a required vaccine, [ARM 37.114.710](#) allows conditional school enrollment if the student continues to receive the remaining vaccine doses on a defined schedule. Subsequently, school staff are required to monitor the progress of conditionally enrolled students until they are fully vaccinated.

## **Purpose**

The purpose of this report is to describe school vaccination coverage levels among students enrolled in public and private schools in Montana.

## **Methods**

Reminders to comply with ARM 37.114.720 were mailed directly to all public and private schools registered with the Montana Office of Public Instruction (OPI) in early September 2015 informing them to complete the school immunization assessment on or before December 1, 2015. Unlike the schools registered with OPI, additional preschools and private schools were identified through internet searches and by local health jurisdiction contacts. A preschool registered as a child care facility was not surveyed under the school assessment. Survey respondents were typically school nurses or other school administrators with access to student immunization records.

Each school has the option to directly enter their results into an online database or fax a report to DPHHS to enter the results. Results were compiled and reviewed for completeness. Individual respondents were contacted regarding inconsistent data or information requiring clarification.

School vaccination requirements for the 2015-2016 academic year included: 4 doses of DTaP/DTP; 3 doses of IPV; 2 doses of MMR; 2 doses of varicella and a Tdap booster for students in 7<sup>th</sup> grade and above. Students in preschool were required to have: 4 doses of DTaP/DTP; 3 doses of IPV; 1 dose of MMR; 1 dose of varicella and at least 1 dose of *Haemophilus influenzae* type b (Hib).

The assessment collected cross-sectional data at a single point in time so changes in vaccination coverage after initial submission of the survey were not captured.

## **Results**

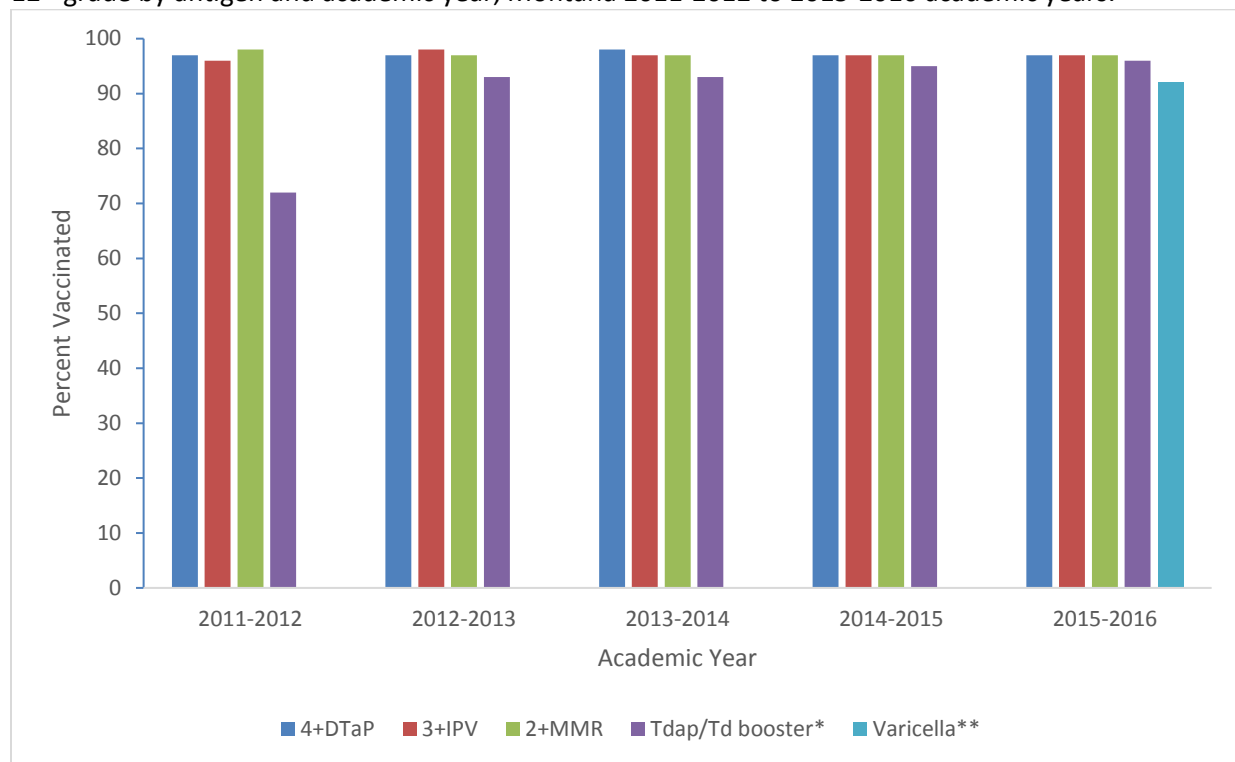
Seven hundred and eighty seven public K-12<sup>th</sup> grade schools (95%) submitted an immunization survey (Table 1). Of the 99 private schools serving K-12<sup>th</sup> grade students that were identified, 62 (63%) submitted a school immunization survey (Table 1).

**Table 1.** Number and percent of public and private schools submitting the School Immunization Survey, Montana 2015-2016 academic year.

Grade	Public Schools			Private Schools		
	Number Reported	Did not Report	Total n (%)	Number Reported	Did not report	Total n (%)
Pre K	84	0	84 (100)	67	56	123 (54)
K-12	787	41	828 (95)	62	37	99 (63)
Total	871	41	912 (96)	129	93	222 (58)

Over the past 5 academic years, statewide vaccination rates for DTaP, IPV and MMR have remained stable. The statewide Tdap/Td booster vaccination rate has increased from a low of 72% in 2011-2012 to a high of 96% in 2015-2016 (Figure 1). In the first year of requirement, the statewide varicella vaccination rate was 92% among kindergarten through 12<sup>th</sup> grade students (Figure 1).

**Figure 1.** Vaccination coverage rates among public and private school students enrolled in kindergarten–12<sup>th</sup> grade by antigen and academic year, Montana 2011-2012 to 2015-2016 academic years.



\*For the 2015-2016 academic year, only students who received the Tdap vaccination are counted as compliant. In previous years, students with Tdap or Td booster were counted as compliant.

\*\*Varicella added to school vaccination requirements for 2015-2016 academic year.

Abbreviations: DTaP =diphtheria, tetanus toxoid, and acellular pertussis vaccine; IPV = inactivated poliovirus vaccine; MMR = measles, mumps, and rubella vaccine; Td = tetanus and diphtheria vaccine; Tdap = tetanus toxoid, diphtheria, and acellular pertussis for 7-12<sup>th</sup> grades.

During the 2015-2016 academic year, over 93% of students in grades kindergarten through 8<sup>th</sup> grade received the varicella vaccine, while less than 90% of high school (grades 9-12) students received varicella vaccination. The lowest percentage (85.2%) of varicella vaccination was among 12<sup>th</sup> grade students (Table 2).

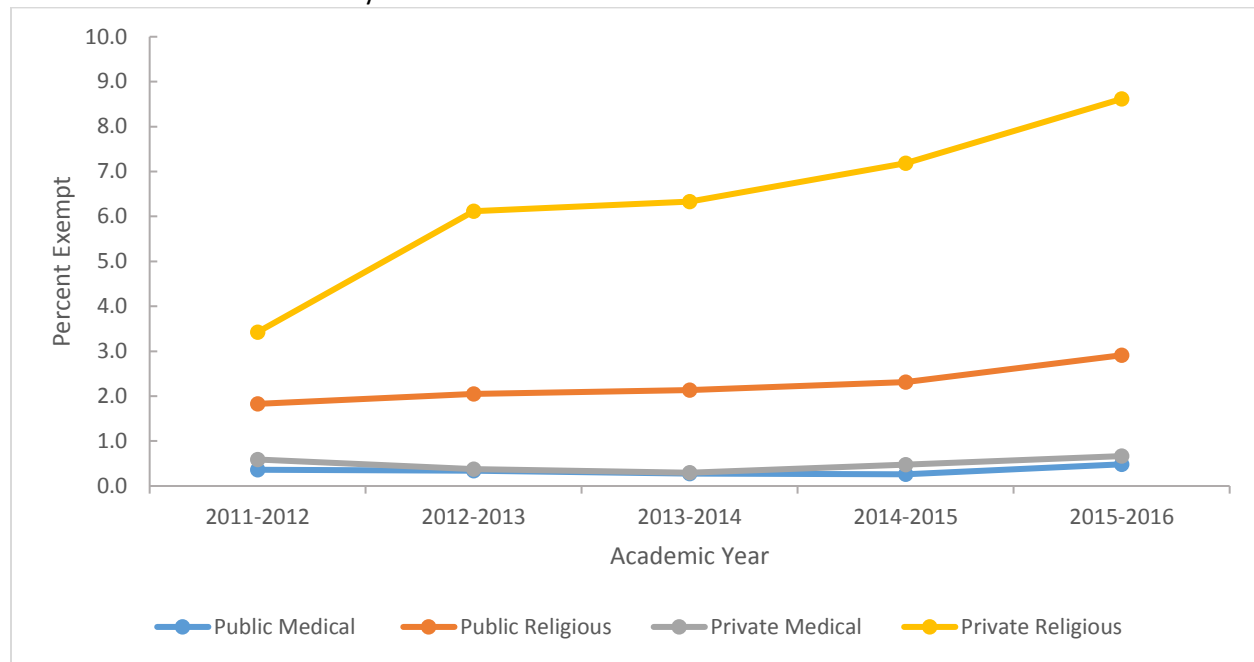
**Table 2.** Vaccination coverage percent by grade and antigen among public and private school students, Montana 2015-2016 academic year.

Grade	No. students	Conditional Exemptions (%)	Medical Exemptions (%)	Religious Exemptions (%)	1 Dose Hib (%)*	1 or 2 doses Varicella (%)	2+ doses MMR (%)	3+ doses IPV (%)	4+ doses DTaP (%)	1+ dose Tdap (%)
Pre-K	3535	53 (1.5)	10 (<1)	83 (2.3)	3054 (86.4)	3228 (91.3)	3229 (91.3)	3243 (91.7)	3226 (91.3)	
K	11639	266 (2.3)	49 (<1)	395 (3.4)		10886 (93.5)	11042 (94.9)	11086 (95.2)	10947 (94.1)	
1	11549	146 (1.3)	35 (<1)	414 (3.6)		10901 (94.4)	11093 (96.1)	11116 (96.3)	11002 (95.3)	
2	11860	143 (1.2)	47 (<1)	382 (3.2)		11238 (94.8)	11441 (96.5)	11449 (96.5)	11441 (96.5)	
3	11899	149 (1.3)	49 (<1)	394 (3.3)		11284 (94.8)	11502 (96.7)	11522 (96.8)	11505 (96.7)	
4	11818	147 (1.2)	44 (<1)	364 (3.1)		11219 (94.9)	11478 (97.1)	11490 (97.2)	11469 (97.0)	
5	11265	192 (1.7)	59 (<1)	319 (2.8)		10629 (94.4)	10938 (97.1)	10953 (97.2)	10943 (97.1)	
6	11459	220 (1.9)	40 (<1)	318 (2.8)		10793 (94.2)	11153 (97.3)	11171 (97.5)	11167 (97.5)	
7	11346	276 (2.4)	46 (<1)	333 (2.9)		10643 (93.8)	11038 (97.3)	11058 (97.5)	11041 (97.3)	10663 (94)
8	11374	209 (1.8)	44 (<1)	336 (3.0)		10589 (93.1)	11096 (97.6)	11121 (97.8)	11120 (97.8)	10814 (95.1)
9	11253	277 (2.5)	64 (<1)	331 (2.9)		10067 (89.5)	10991 (97.7)	11008 (97.8)	10986 (97.6)	10916 (97)
10	10661	300 (2.8)	80 (<1)	310 (2.9)		9465 (88.8)	10385 (97.4)	10396 (97.5)	10380 (97.4)	10335 (96.9)
11	10228	291 (2.8)	77 (<1)	340 (3.3)		8994 (87.9)	9925 (97)	9959 (97.4)	9942 (97.2)	9768 (95.5)
12	9635	376 (3.9)	83 (<1)	308 (3.2)		8205 (85.2)	9327 (96.8)	9356 (97.1)	9341 (96.9)	9235 (95.8)

\*Students in Pre-K are required to have at least one dose of Hib vaccine administered on or after their first birthday, unless the student is older than 59 months.

The statewide percentage of Montana students enrolled in kindergarten through 12<sup>th</sup> grade who had medical exemptions to one or more vaccine(s) has remained at or below 0.5% between the 2011-2012 and 2015-2016 academic years among public school students, and at or below 0.7% among private school students (Figure 2). Over the same time period, the statewide percentage of Montana students enrolled in kindergarten through 12<sup>th</sup> grade with a religious exemption to one or more vaccine(s) increased from 1.8% during the 2011-2012 academic year to 2.9% during the 2015-2016 academic year among public school students, and from 3.4% to 8.6% among private school students. Figures 3 and 4 describe county level medical and religious exemption percentages, respectively.

**Figure 2.** Percentage of public and private school students enrolled in kindergarten–12<sup>th</sup> grade with medical or religious exemptions to required vaccines by exemption and school type, Montana 2011-2012 to 2015-2016 academic years.



### **Limitations**

The school immunization assessment is subject to several limitations. First, data was collected from reports submitted by school nurses, administrators, and teachers. The accuracy and completeness of the data cannot be verified because reviews of individual immunization records for students were not completed. Second, immunization records were not available for all students, which could affect overall vaccine coverage or exemption percentages. Third, the survey collects cross-sectional data at a single point in time. Changes in immunization coverage related to changes in student enrollment or vaccines administered after the initial submission were not detected by the survey. Fourth, a child with an exemption to a vaccine or vaccines is not necessarily unvaccinated for all vaccines.

Private schools and preschools are required to report the immunization status of all enrolled students; however, they are not accredited and a master list of schools is not available. Typically, county health officials compile a list of schools, but frequent changes in the opening and closing of private schools make this list difficult to maintain, leading to the possible inclusion of schools that are closed in the denominator resulting in an inflated percentage of private schools not reporting.

### **Conclusion**

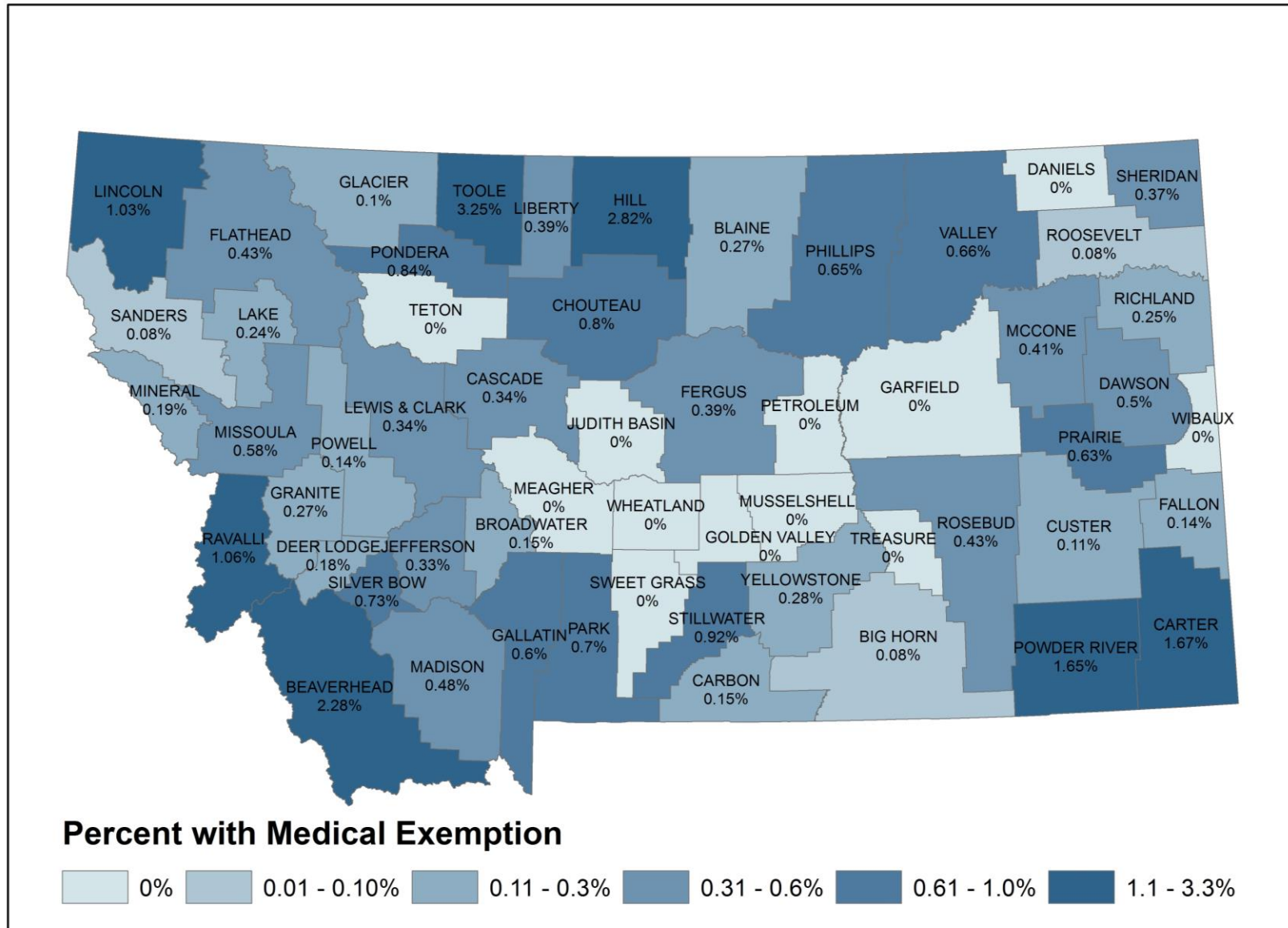
Measured immunization coverage levels statewide are above estimated herd immunity levels for diphtheria, measles, mumps, pertussis, polio, rubella, and tetanus. A small percentage of children have medical or religious exemptions to required vaccines. Statewide, less than 1% of students had medical exemptions and 3.1% of students reported a religious exemption for the

2015-2016 academic year. Schools with immunization coverage below 85% for at least one required vaccine may be at risk for disease outbreaks.

Based on the results of the 2015-2016 School Immunization Assessment the Montana Immunization Program suggests the following recommendations for improving school immunization rates in Montana:

- The Immunization Program will develop a new database for collecting school immunization data that will improve data completeness and accuracy as well as improve the users' experience.
- The school districts and the local health departments will develop a collaborative effort in tracking students excluded for failing to meet the requirements of a conditional enrollment and notify the Montana Immunization Program when the child has met the immunization requirements.
- In the first year of the requirement, the statewide varicella vaccination rate was 92%. The 2016-2017 academic year school immunization assessment will provide the opportunity to compare both the statewide and grade level varicella vaccination rate and identify targets for improvement.
- The Immunization Program will continue to monitor medical and religious exemptions for increases or decreases in rates across academic years and at the county level.

**Figure 3.** Percentage of public and private school students enrolled in kindergarten through 12th grade with a medical exemption to required vaccines, Montana 2015-2016 academic year.



**Figure 4.** Percentage of public and private school students enrolled in kindergarten through 12<sup>th</sup> grade with a religious exemption to required vaccines, Montana 2015-2016 academic year.

