

Introduction

The Annual School Immunization Survey is mandated by Administrative Rule Montana (A.R.M. 37.114.720) and requires each school's (public and private) governing authority or designee to submit the immunization status of all students in the school. The reports are due by December 1 of the current school year.

The survey assesses immunization coverage for vaccines which are required by ARM 37.114.705 for school entry: Diphtheria, Tetanus, Pertussis (DTaP/DTP/Tdap/DT/Td), Polio (IPV), and Measles, Mumps, Rubella (MMR). Students must be vaccinated with the following antigens: 4 doses of DTaP/DTP/DT/Td; 3 doses of polio; 2 doses of MMR.

The surveys also collect information on the percentage of students without immunization records and the percentage of students reporting medical or religious exemptions from vaccination.

Results

According to the Office of Public Instruction there are 826 public schools in Montana, 441 elementary, 214 middle schools (7th & 8th grades) and 171 high schools (Facts About Montana Education 2012). Of the 826 eligible schools, 794 (96.1%) schools submitted an immunization survey. During the 2012-2013 school year, data were collected on 79,844 kindergarten through sixth grade students in Montana (both public and private schools). Of these students, 77,310 (96.8%) had 2 MMRs, 77,522 (97.1%) had 3+ polios, and 77,387 (96.9%) had 4+ DTaP/DTP/DT or Td (Table 1).

There were 22,289 seventh through eighth graders' (public and private) immunization records reviewed during the 2012-2013 school year. Of these students 21,323 (95.6%) received a Td booster dose, 21,826 (97.9%) had 2 MMRs, 21,858 (98.7%) had 3+ polios and 21,830 (97.9%) had 4+ DTaP/DTP/DT or Td (Table1).

For the 2012-2013 school year, 43,014 ninth through 12th grade students' (public and private) immunization records were reviewed. Of these students 39,244 (91.2%) had received a Td booster dose; 42,245 (98.4%) had 2 MMRs; 4,245 (98.2%) had 3+polios; and 42,308 (98.3%) had 4+ DTaPs (Table1).

Vaccination status of students was considered up-to-date if they had received all of the vaccines required for school entry.

Table 1. Summary of percentage of students completely immunized.

	Vaccine	Kindergarten-6 th Grade	7 th -8 th Grade	9 th -12 th Grade
Percentage of students completely immunized according to school law	DTaP (4+ doses)	96.9	97.9	98.3
	MMR (2 doses)	96.8	97.9	98.2
	Polio (3+doses)	96.9	98.0	98.2
	Booster Tdap/Td (7 th -12 th Grade)	N/A	95.6	91.8

For Montana students, there are two exemptions to the immunization requirements that may be submitted in lieu of the required dates of immunization allowed by Montana Code Annotated (MCA) 20-5-405. A medical exemption 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 HES 105 can only be signed by a Doctor of Medicine (MD) or a Doctor of Osteopathy (DO).

The second exemption allowed is an exemption for Religion. Religious exemptions require a parent, guardian or an emancipated minor to fill out form HES103, stating they object to any or all vaccines, allowing their child or themselves to be exempted from the requirement for those vaccines. Religious exemptions must be notarized each year.

Most immunizations call for multiple doses of vaccine. For students who have not completed all doses required, state statute allows them to be conditionally enrolled in school if they have received at least one dose of each of the required vaccines prior to enrollment and continue to get the remaining shots on a set schedule. This means that school staff will need to track progress toward the completion of the required immunizations.

Table two shows the number of students by grade (K-12), the number of students with conditional enrollments (needing to catch up on required immunizations), medical and religious exemptions and the percentage of students by grade that are up-to-date for the required school vaccines.

The table shows the kindergarten class has the highest number of religious exemptions with 366 students out of 11,990 with religious exemptions. As expected with the highest number of religious exemptions, this class has the lowest percentage of students with 2 doses MMR, 3 doses of IPV and 4 doses of DTaP.

Students in 8th grade had the highest numbers of students with medical exemptions, 67 students out of 11,250, with 7th grade a close second with 64 out of 11,039 students with a medical exemption. A possible reason for these two grades to have a high medical exemption rate could be due to the Tdap/Td booster dose required prior to entering 7th grade. Despite holding the highest numbers of medical exemptions both 7th and 8th graders were at 98% immunized for the required school immunizations.

Students in upper elementary (5th-6th grade) through high school were at 98% for 2 MMRs, 3 IPVs and 4 DTaPs. Ninety six percent of 8th graders had received the booster dose of either Tdap or Td.

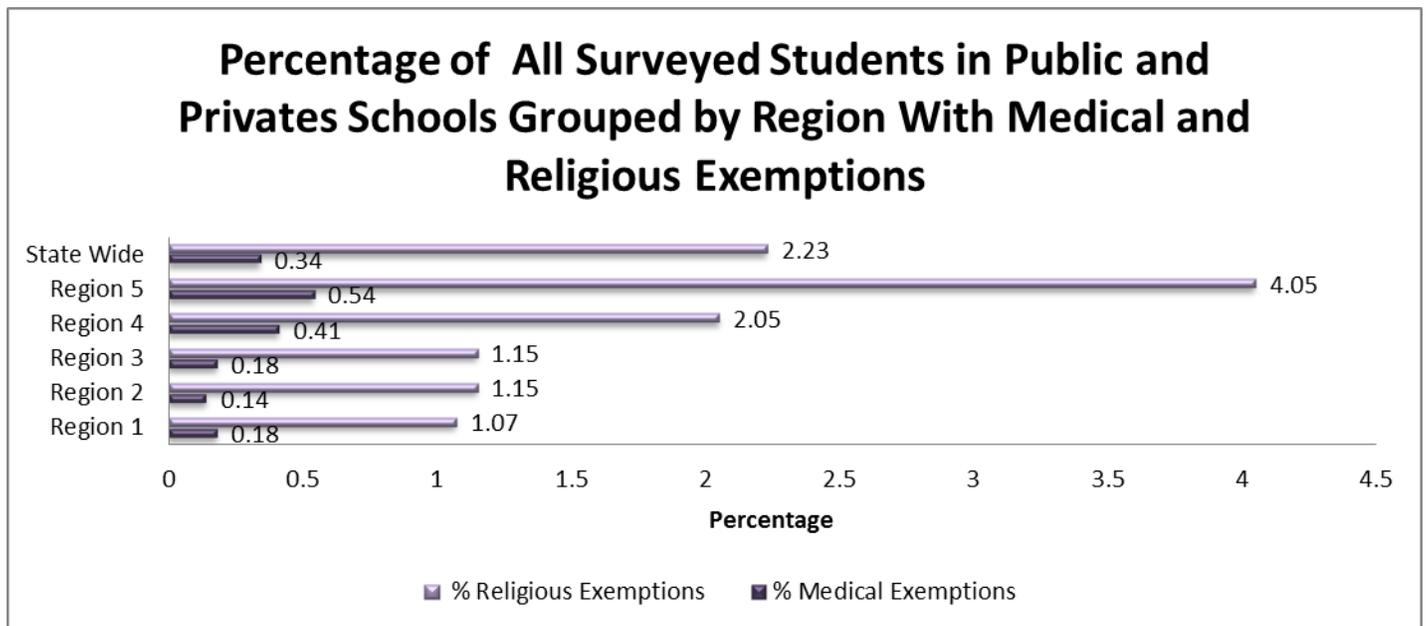
Table 2. Vaccination coverage characteristics by grade and antigen, Montana, 2012.

Grade	No. students	Conditional enrollments (%)	Medical exemptions (%)	Religious exemptions (%)	Antigen			
					2+ doses MMR (%)	3+ doses IPV (%)	4+ doses DTaP (%)	1+ dose Td/Tdap (%)
K	11990	177 (1)	48 (<1)	366 (3)	11416 (95)	11468 (96)	11424 (95)	—
1	11962	34 (<1)	42 (<1)	346 (3)	11537 (96)	11567 (97)	11545 (97)	—
2	11628	29 (<1)	45 (<1)	311 (3)	11104 (95)	11128 (96)	11106 (96)	—
3	11354	22 (<1)	34 (<1)	279 (3)	11037 (97)	11069 (97)	11052 (97)	—
4	11052	24 (<1)	43 (<1)	258 (2)	10729 (97)	10766 (97)	10754 (97)	—
5	10910	20 (<1)	26 (<1)	211 (2)	10667 (98)	10676 (98)	10667 (98)	—
6	11061	10 (<1)	28 (<1)	201 (2)	10820 (98)	10844 (98)	10833 (98)	—
7	11039	47 (<1)	64 (<1)	243 (2)	10795 (98)	10807 (98)	10790 (98)	10483 (95)
8	11250	14 (<1)	67 (<1)	235 (2)	11016 (98)	11036 (98)	11025 (98)	10806 (96)
9	11635	26 (<1)	39 (<1)	248 (2)	11354 (98)	11391 (98)	11383 (98)	10644 (91)
10	10973	12 (<1)	22 (<1)	211 (2)	10771 (98)	10793 (98)	10777 (98)	9999 (91)
11	10505	16 (<1)	20 (<1)	171 (2)	10319 (98)	10339 (98)	10331 (98)	9574 (91)
12	9975	21 (<1)	22 (<1)	157 (2)	9801 (98)	9818 (98)	9812 (98)	9027 (90)
Total	145334	452 (<1)	500 (<1)	3237 (2)	141366 (97)	141702 (98)	141499 (97)	60863 (93)

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 vaccine.

Completed data analysis suggests there is little difference among the five regions in the percentage of students with medical exemptions. However, the data highlights a greater percentage of Religious Exemption Forms in Western Montana (regions 4 & 5). (Graph, Figure 1 and Figure 2)

Graph. Percentage of students with exemptions, by Region.



Region 1 Counties: Carter, Custer, Daniels, Dawson, Fallon, Garfield, McCone, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Valley and Wibaux

Region 2 Counties: Blaine, Cascade, Chouteau, Glacier, Hill, Liberty, Phillips, Pondera, Teton, Toole

Region 3 Counties: Big Horn, Carbon, Fergus, Golden Valley, Judith Basin, Musselshell, Petroleum, Stillwater, Sweetgrass, Treasure, Wheatland, Silver Bow

Region 4 Counties: Beaverhead, Broadwater, Deer Lodge, Gallatin, Granite, Jefferson, Lewis and Clark, Madison, Meagher, Park, Powell, Silver Bow

Region 5 Counties: Flathead, Lake, Lincoln, Mineral, Missoula, Ravalli, Sanders

Limitations

The data obtained are estimates of the immunization coverage of school children in Montana. Montana does not mandate reporting of immunizations to a centralized registry. As a result, data gathered through these surveys were obtained through self-report by nurses, school administrators and teachers. Reporting discrepancies and human error in reporting may lead to inaccuracies in reported coverage levels.

The data in the report reflect the immunization status of *surveyed* students only. A small portion of students did not have immunization records and their immunization statuses were unknown. The survey collects cross-sectional data, at a single point in time. Changes in vaccination coverage, due to changes in student enrollment and vaccinations completed after the initial submission are not captured in the survey.

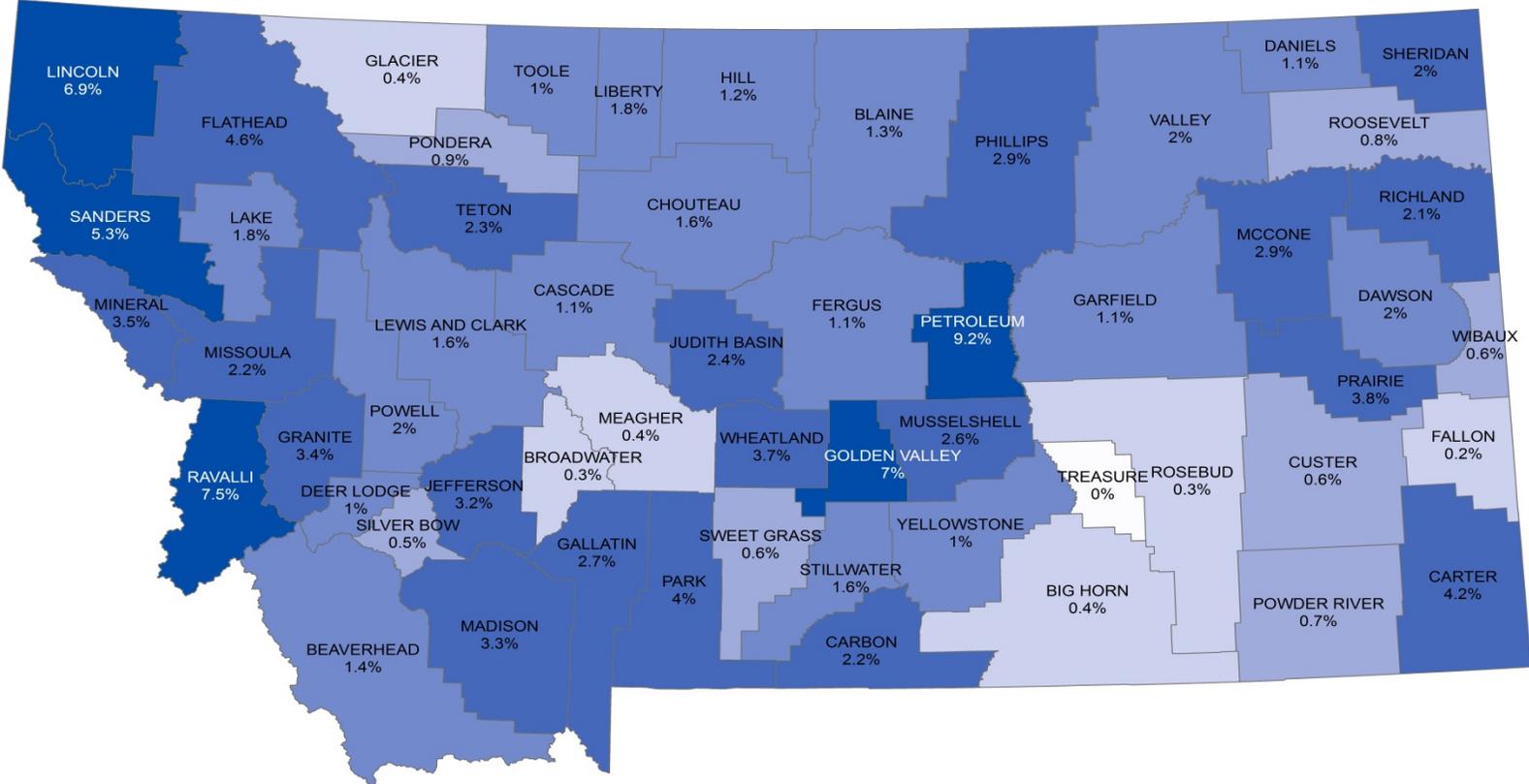
Conclusion

The survey estimates that more than 95% (with the exception of Tdap/TD which was ≈ 92%) of children enrolled in Montana schools have received all required vaccinations for school entry. Less than 2% of students requested medical exemptions. Approximately 2% of students requested religious exemptions, ranging from 0% to a high of 8.8% when examined by county of residence.

School vaccination requirements are intended to protect the health of not only the student receiving the immunization, but also the health of students who, due to medical reasons are unable to be immunized. In addition to the potential health risk to an unvaccinated child being exposed to a disease, that child may be excluded from child care, school, sporting events, or other organized activities during disease outbreak or a result of illness.

Figure 1. Montana Map Showing Percentage of Religious Exemptions per County.

Percent of Enrolled Pupils with Religious Vaccine Exemptions Montana, 2012-13 School Year

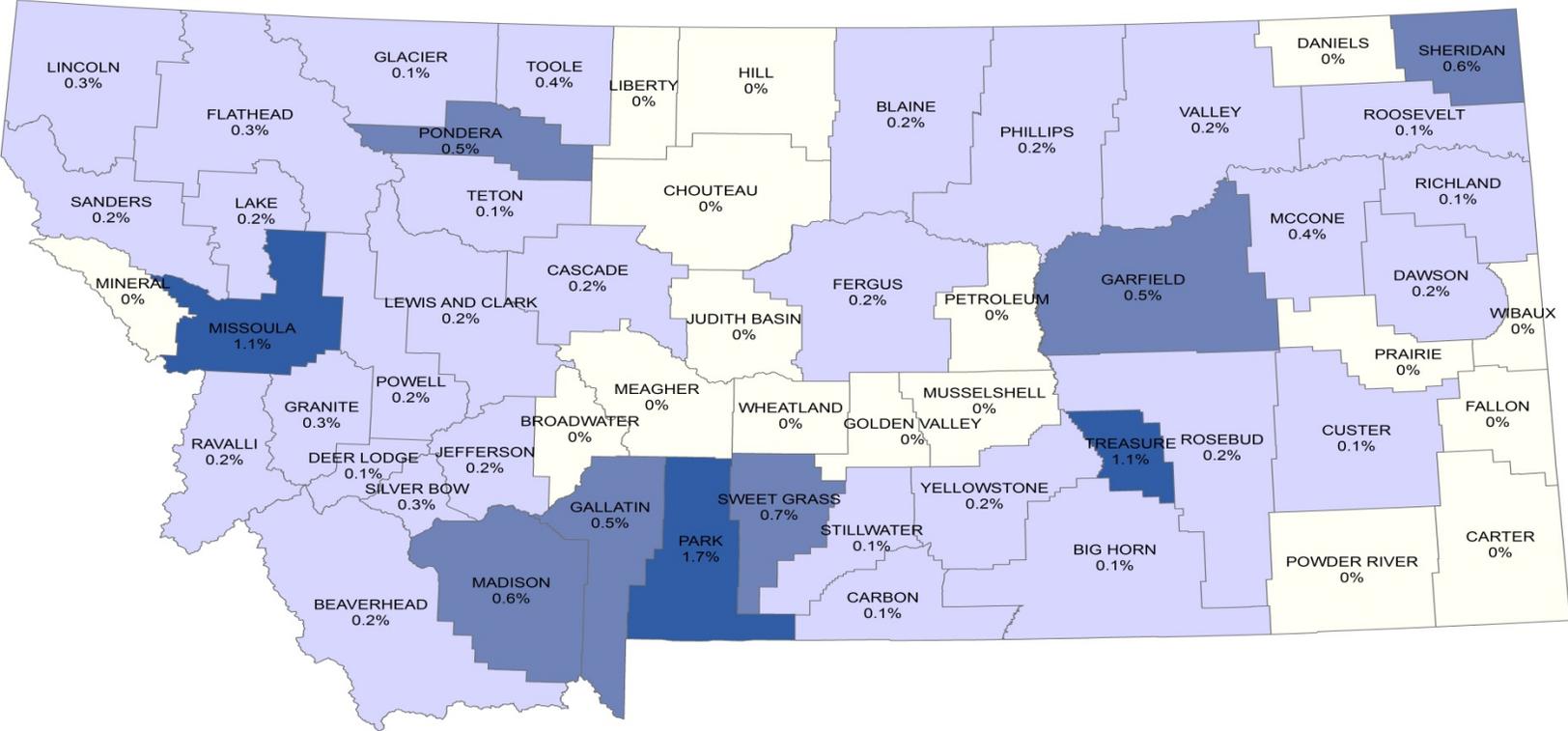


Percent with Religious Exemptions



Figure 2. Montana Map Showing Percentage of Medical Exemptions per County.

**Percent of Enrolled Pupils with Medical Vaccine Exemptions
Montana, 2012-13 School Year**



Percent with Medical Exemptions

