

▶ 2010–2011 Immunization School Survey Assessment (ISSA)



Colorado Department
of Public Health
and Environment

IMMUNIZATION SECTION

2010–2011 Immunization School Survey Assessment (ISSA)

► Introduction

The Colorado Board of Health rules pertaining to the immunization of students attending school require that a child entering kindergarten have

- 5 Diphtheria/Tetanus/Pertussis (DTaP) doses or 4 with the 4th on or after the 4th birthday
- 4 Polio doses or 3 with 3rd on or after the 4th birthday
- 2 Measles/Mumps/Rubella doses (MMR)
- 3 Hepatitis B doses.
- 2 Varicella doses or history of having had varicella disease (a change from the 2006/2007 school year when only 1 dose of varicella was required)
- A Certificate of Immunization in the school file

Each year the Colorado Immunization Section (CIS) is required to determine the immunization status of kindergartners at school entry. From 2005–2008 this was done using random sampling and abstracting information from selected students' school immunization records.

The survey could not be completed for the 2008/2009 or 2009/2010 school year due to changes in the Family Educational Rights and Privacy Act (FERPA) that defined birth date as personally identifiable information. A birth date is required to calculate a kindergartner's up to date status for each required immunization. CIS applied for and received funding through the America Reinvestment and Recovery Act (ARRA) to develop a method to collect immunization data from schools that did not require releasing the birth date. This report describes the methodology and results of the 2010/2011 survey.

► Methods

CIS developed a web-based application to collect the survey information. School staff were trained to identify and submit information for the students selected at their school. The information collected included the number of days between birth and each required immunization; any medical, religious or personal exemptions claimed; whether the student is in process of getting required immunizations; and the student's history of disease for varicella. For each school, information was collected about school nurse staff and the time they are on site.

A random sample of 350 students was selected from over 60,000 kindergartners enrolled at public and private schools throughout Colorado. For a few schools, more than one student was selected; a total of 302 schools participated in this year's survey.



► Immunization Coverage

Immunization coverage is reported through two measures: in compliance and up to date. In compliance with the Colorado School Immunization Law is defined as being up to date for all required immunizations, having taken a valid exemption, or being in process (having a plan in place with the school to obtain any remaining required immunizations). Up to date is defined as being appropriately immunized for all required immunizations.

For the 2010/2011 school year between 69.1% and 78.5% of kindergartners in Colorado were up to date on the immunizations required for

school entry (Table 1). The range of values incorporates the confidence intervals and represents where the true rate lays 95% of the time. Confidence intervals are reported when data is based on a sample of the population. Since this survey is based on a sample of kindergartners, the estimated rate of 74% and the confidence interval [69.1% and 78.5%] are both reported in the results.

The percent of kindergartners who were in compliance with the school regulations was estimated at 83.2% with a confidence interval of 78.8–86.9%.

Table 1. Percent of Colorado Kindergartners Up to Date or in Compliance with School Immunization Requirements, Point Estimate and 95% Confidence Intervals, 2010/2011 Colorado School Survey of Kindergartners

School Immunization Status	Point Estimate Percentage	Range with Confidence Intervals
Up to Date at Kindergarten Entry	74.0%	69.1–78.5
Had received all required immunizations for school entry 5 DTaP or 4 with the 4 th dose on or after 4 th birthday 2 MMR 4 Polio or 3 with the 3 rd on or after the 4 th birthday 3 Hepatitis B 2 Varicella		
In Compliance at Kindergarten Entry	83.2%	78.8–86.9
Received all required immunizations or took a medical, religious or personal exemption or are in the process of being immunized		

► Rates by Required Vaccine

The percentage of kindergartners appropriately immunized at school entry was highest for DTaP

and hepatitis B and lowest for polio, varicella and MMR (Table 2).

Table 2. Percent of Colorado Kindergartners Up to Date by Required Vaccines at School Entry, Point Estimate and 95% Confidence Intervals, 2010/2011 Colorado School Survey of Kindergartners

Immunization Status at School Entry by Vaccine	Number Up to Date	Point Estimate Percentage	Up to Date Range Using 95% Confidence Interval
DTaP	324	92.6%	89.3–95.1
Hepatitis B	317	90.6%	87.0–93.4
Polio	289	82.6%	78.2–86.4
Varicella	281	80.3%	75.7–84.3
MMR	278	79.4%	74.8–83.5

► Exemptions

Of the 83.2% of kindergartners in compliance, 74.0% were up to date, 0.6% had taken a medical exemption, 0.3% a religious exemption, 5.4% a personal exemption and 2.9% were in process of getting immunized. Overall 6.3% of kinder-

gartners exempted from one or more required vaccines. Of interest are the 15.1% of children who were not up to date but had no exemption or were not identified as in the process of becoming up to date (Table 3).

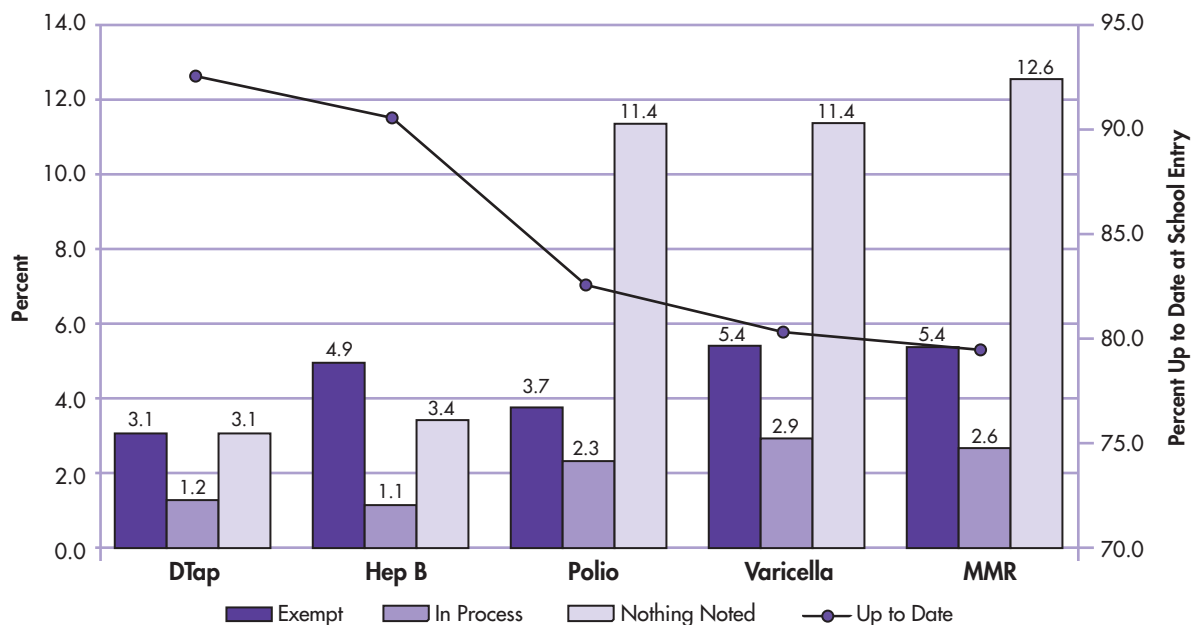
Table 3. Percent of Colorado Kindergartners by Immunization Status at School Entry, Point Estimate, 2010/2011 Colorado School Survey of Kindergartners

Immunization Status at School Entry	Number	Percent
Up to Date	259	74.0%
Medical Exemption	2	0.6%
Religious Exemption	1	0.3%
Personal Exemption	19	5.4%
In Process	10	2.9%
Nothing noted in school immunization record	53	15.1%
No school immunization record	6	1.7%

The percentage of kindergartners who claimed an exemption was highest for varicella and MMR and lowest for DTaP. The percentage of kindergartners who were in process was similar across all vaccines. As the percentage of kindergartners

up to date on required vaccines decreased, the percentage with no indication in the school record as to why they were not up to date increased dramatically (Figure 1).

Figure 1. Percent of Colorado Kindergartners Up to Date by Antigen with Reasons why they were not Up to Date, Point Estimate, 2010/2011 Colorado School Survey of Kindergartners



► Conclusions

The national targets outlined in Healthy People 2020 (HP2020) are to have 95% of children entering school appropriately immunized for DTaP, MMR, polio, hepatitis B and varicella. In Colorado, only DTaP coverage meets this goal with a confidence interval of 89.3–95.1%. Clearly, there is a need to increase the number of Colorado kindergartners who have received the required immunizations at school entry.

Of the kindergartners starting school in the Fall of 2010 as few as 21.5% and as many as 30.9% did not have one or more of the required immunizations recorded in their school record. At least 78.8% of kindergartners and at most 86.9% were in compliance with the school regulations by either being up to date on all required immunizations or by taking an exemption. These results are comparable to the results from the school surveys done from 2004/2005 through 2007/2008, but detailed comparison across years is problematic as the data collection methods varied.

This year, the up to date rates for varicella and MMR were the lowest overall. The rate for varicella may be lower because of the relatively new requirement of a 2nd dose which began in the 2007/2008 school year. Unsubstantiated reports of a link between receipt of MMR and autism may account for the lower up to date rate for MMR.

Up to 15.1% of kindergartners who were not up to date had nothing in their school record to indicate why. This implies that when these kindergartners registered

either they were not identified as non-compliant or efforts by school staff to ensure that the child received the required shots were not effective. Either way, the concern with this finding is that these children did not receive the required vaccines, claim an exemption or were in process of getting immunized as a condition of school entry as required by Colorado Board of Health rules.

It's possible that these children are up to date in their medical record and that their school record is incomplete or has been recorded incorrectly. CIS is in the process of connecting schools to the Colorado Immunization Information System (CIIS). Having the ability to look up a child's immunization record in the registry will help increase the accuracy and completeness of school immunization records.

CIS is currently working to educate both parents and providers on the importance of immunizations. Colorado recently developed an education-focused website, www.ImmunizeForGood.com that has received national recognition. To ensure health care providers are equally educated on the benefits of immunization, CIS will also launch a new provider education series in 2011.

CIS will continue to monitor Colorado's progress in reaching the HP2020 goals for kindergartners. HP2020 includes immunization coverage goals for all ages, but this milestone age group was earmarked with the highest coverage goal, further illustrating the importance of protecting this vulnerable population.



