



EPI UPDATES

November
2012

Inside This Issue:

Kindergarten Immunization	1-2
Vaccine Preventable Disease Indicators	3
Breakdown by Disease	4
Outbreak Summaries	5

Kindergarten Immunization Coverage Survey

Elizabeth Lawlor, MS

The Kansas Certificates of Immunizations (KCI) and other immunization records for children enrolled in kindergarten in Kansas public and private schools during the 2011-2012 school year were collected and evaluated for immunization coverage. Vaccination coverage levels were calculated for children at the time of school entry and 30 days following school entry. Children who were between the ages of five and seven years on the first day of the school year were included in the study. In total, there were 793 schools (689 public and 104 private) included in the analysis, which consisted of a representative sample of 16,127 children.

The immunization coverage levels at school entry of all the vaccinations required for school entry [five doses of the DTaP vaccine (DTaP5)*, four doses of

the polio vaccine (Polio4), two doses of the MMR vaccine (MMR2), two doses of the varicella vaccine (Var2), and three doses of the hepatitis B vaccine (HepB3)] were at or above 86%, with HepB3 having the highest coverage of any vaccination (Figure 1). The complete series for all five required vaccinations (5-4-2-2-3) had a coverage level of 80% at school entry. Healthy People 2020 (HP2020) goals for kindergarten vaccination coverage levels are $\geq 95\%$ for all vaccines required by Kansas for school entry. Hepatitis B vaccination was the only immunization that reached this goal.

The immunization coverage levels of kindergartners increased significantly for most required vaccinations (DTaP5*, Polio4, MMR2, Var2) when comparing coverage levels from school entry to 30

(Continued on page 2)

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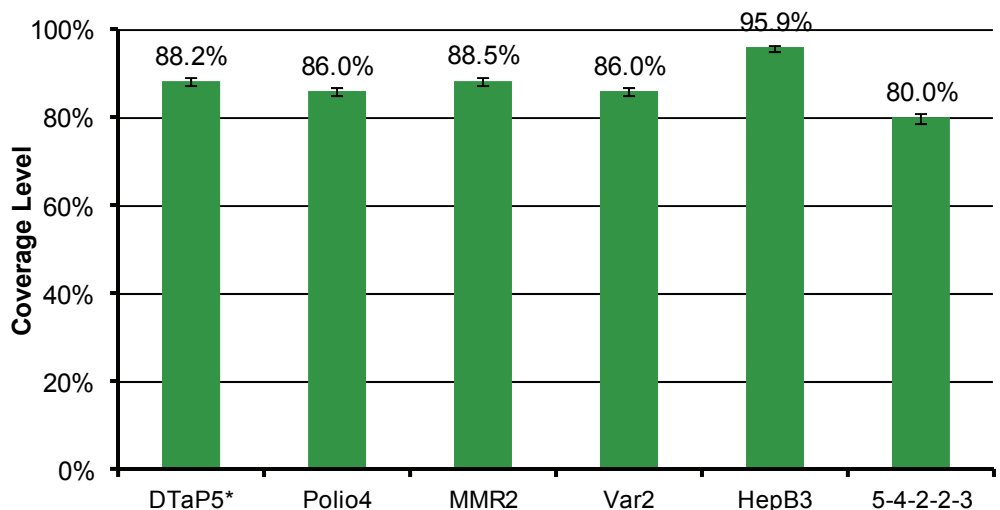
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Figure 1: Immunization Coverage Levels of Kindergarten Students at School Entry, Kansas 2011-2012



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days following the first day of school (Table 1). The percentages of kindergartners up to date for all required vaccinations [5-4-2-2-3: DTaP5*, Polio4, MMR2, Var2, HepB3] were significantly higher 30 days after school entry than they were on the first day of school. The only required vaccination that did not have a significantly increased coverage level was HepB3.

Table 1. Immunization coverage levels of kindergarten students at school entry and 30 days following school entry, Kansas 2011-2012.

	At School Entry	30 Days After School Entry
	% (95% CI)	% (95% CI)
DTaP5*	88.2 (87.2 - 89.2)	90.7 (89.7 - 91.6)
Polio4	86.0 (85.0 - 87.1)	88.3 (87.3 - 89.4)
MMR2	88.5 (87.5 - 89.4)	91.0 (90.1 - 91.8)
Var2	86.0 (85.0 - 87.1)	88.6 (87.7 - 89.6)
HepB3	95.9 (95.3 - 96.6)	96.0 (95.3 - 96.7)
5-4-2-2-3	80.0 (78.7 - 81.3)	82.7 (81.5 - 84.0)

There was significant variation in immunization coverage levels for kindergartners enrolled in public and private schools (Figure 2). Children enrolled in public schools had significantly higher immunization coverage for all required vaccinations as well as the 5-4-2-2-3 series than children enrolled in private school. However, there was no significant difference in immunization coverage levels for the non-required vaccinations [*Haemophilus influenzae* type b (Hib3), hepatitis A (HepA2), and pneumococcal

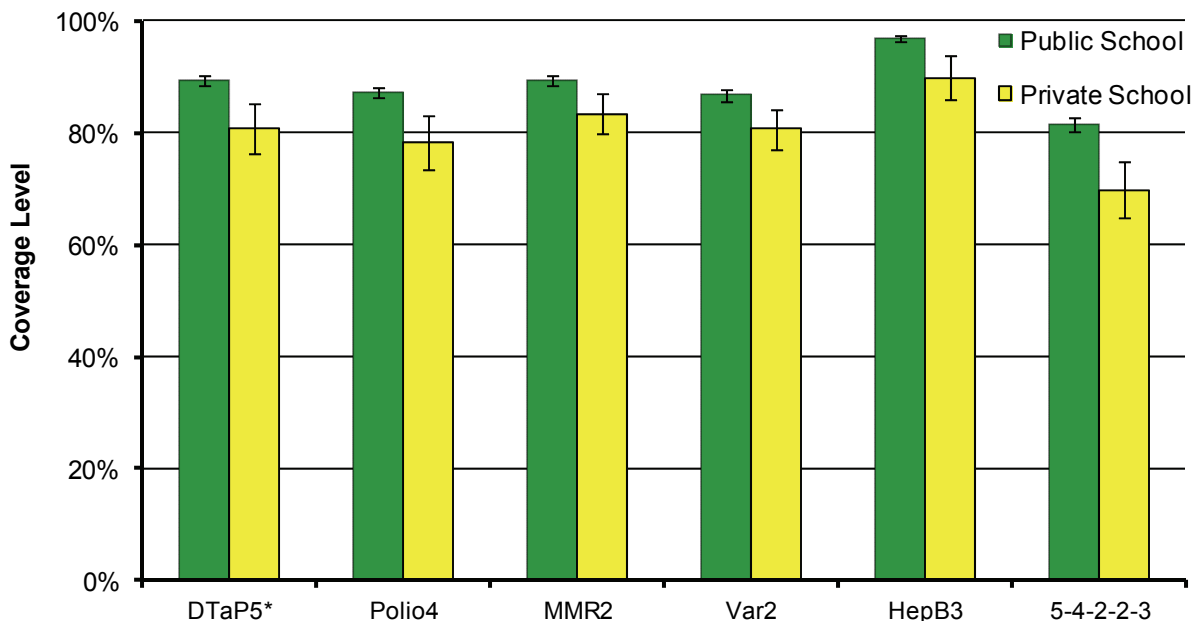
conjugate (PCV4)] between public school and private school enrollees.

In the State of Kansas, two legal alternatives to vaccination at school entry exist: medical and religious exemption. To receive a medical exemption, a physician must sign a form annually stating the reason for exemption and from which vaccine(s) the child is exempt. To receive a religious exemption, a parent or guardian must write a statement explaining that the child is an adherent of a religious denomination whose religious teachings are opposed to such inoculations. During the 2011-2012 kindergarten study, 494 children were reported as having an exemption, which correlates to 1.3% of the kindergarten population. Of the exemptions, 364 were categorized as religious, while the remaining 130 were medical. Exemptions occurred throughout the state; however, counties with the greatest percentage of students with an exemption on file were found in the eastern half of the state. Unified school districts (USDs) with the greatest percentage of students with an exemption were those clustered in high population areas, including the areas surrounding Wichita, Kansas City, and Topeka. Additionally, there is a cluster of USDs which had a high percentage of students with an exemption in the north-central region of the state. Of the 283 school districts that submitted data, 153 (54%) reported no exemptions, while five (2%) reported 10% or more students with an exemption.

The full report can be found at http://www.kdheks.gov/immunize/download/Kindergarten_2011-12.pdf.

* 5 doses of DTaP or 4 doses if the fourth is administered on or after the fourth birthday.

Figure 2: Immunization Coverage Levels of Public and Private School Kindergartners at School Entry, Kansas 2011-2012



Vaccine-Preventable Disease Surveillance Indicators

Chelsea Raybern

The completeness and quality of specific surveillance indicators for vaccine-preventable diseases (VPDs) reported to the Kansas Department of Health and Environment (KDHE) from October 1-31, 2012 can be found in the table below. The bolded percentages represent the indicators that have less than 90% completion. Fields in EpiTrax that were filled in as unknown or left blank were considered unanswered for the completeness of indicators. The case counts presented in this report are preliminary numbers and are subject to change.

Keep up the good work! When compared to last month's surveillance data, completeness of indicators has improved for many of the diseases. Date of birth, gender, and race were completed for more than 90% of all VPDs reported from October 1-31, 2012. The median number of days from report date to case acceptance for all VPDs was between 0-2 days, which represents an improvement, although range of days for case acceptance was quite long for some diseases. The percentages and numbers highlighted in red represent indicators that have improved since last month.

Still room for improvement...Completeness of vaccination status and transmission setting was much lower than 90% for mumps, pertussis, varicella, and *Streptococcus*

pneumoniae (invasive disease). Completed investigations are also much lower than 90% for more than half of the reported VPDs [pertussis, *Streptococcus pneumoniae* (invasive disease), and varicella]. For pertussis cases, vaccination status was completed for only 66% of cases, and thus far the investigation has been completed for only 58% of cases. Even though transmission setting was completed more frequently for pertussis and varicella cases reported in October when compared to last month, they were still only 22% and 50% complete respectively. The median number of days for local health departments to accept pertussis cases improved, but the range more than doubled from last month.

There was an increase in *Streptococcus pneumoniae* (invasive disease) cases compared to last month, but no clusters or other commonalities have been identified.

Please focus on completing these fields in EpiTrax for all VPDs—the goal is to reach 90% or higher completion on all indicators. For the one timeliness indicator (report to investigation start), the data shows delayed investigation start times, so please work towards accepting cases and starting the investigation the same day the local health department receives notification.

For questions regarding this data, please contact Chelsea Raybern at (785) 296-0339 or craybern@kdheks.gov.

VPD Indicators Reported from October 1-31, 2012 in Kansas

Indicators	Meningococcal disease	Mumps	Pertussis	<i>Streptococcus pneumoniae, invasive</i>	Varicella
Number of reported cases	1	1	145	13	38
% of cases with date of birth	100%	100%	100%	100%	100%
% of cases with gender	100%	100%	100%	100%	97%
% of cases with race	100%	100%	93%	92%	97%
% of cases with ethnicity	100%	100%	90%	62%	89%
% of cases with onset date	100%	100%	95%	85%	95%
% of cases with hospitalized noted	0%	100%	85%	85%	87%
% of cases with died noted	100%	100%	99%	85%	89%
% of cases with vaccination status	100%	100%	66%	23%*	82%
% of cases with transmission setting	N/A [§]	0%	22%	N/A [§]	50%
% of investigations completed by local health departments [†]	100%	100%	58%	69%	79%
Median # of days from report to start of investigation (range) [‡]	0 (0)	1 (1)	1 (0-37)	2 (0-21)	0 (0-18)

*Indicator considered complete if either polysaccharide or conjugate pneumococcal vaccine history is documented

§Indicator field not included in supplemental disease form

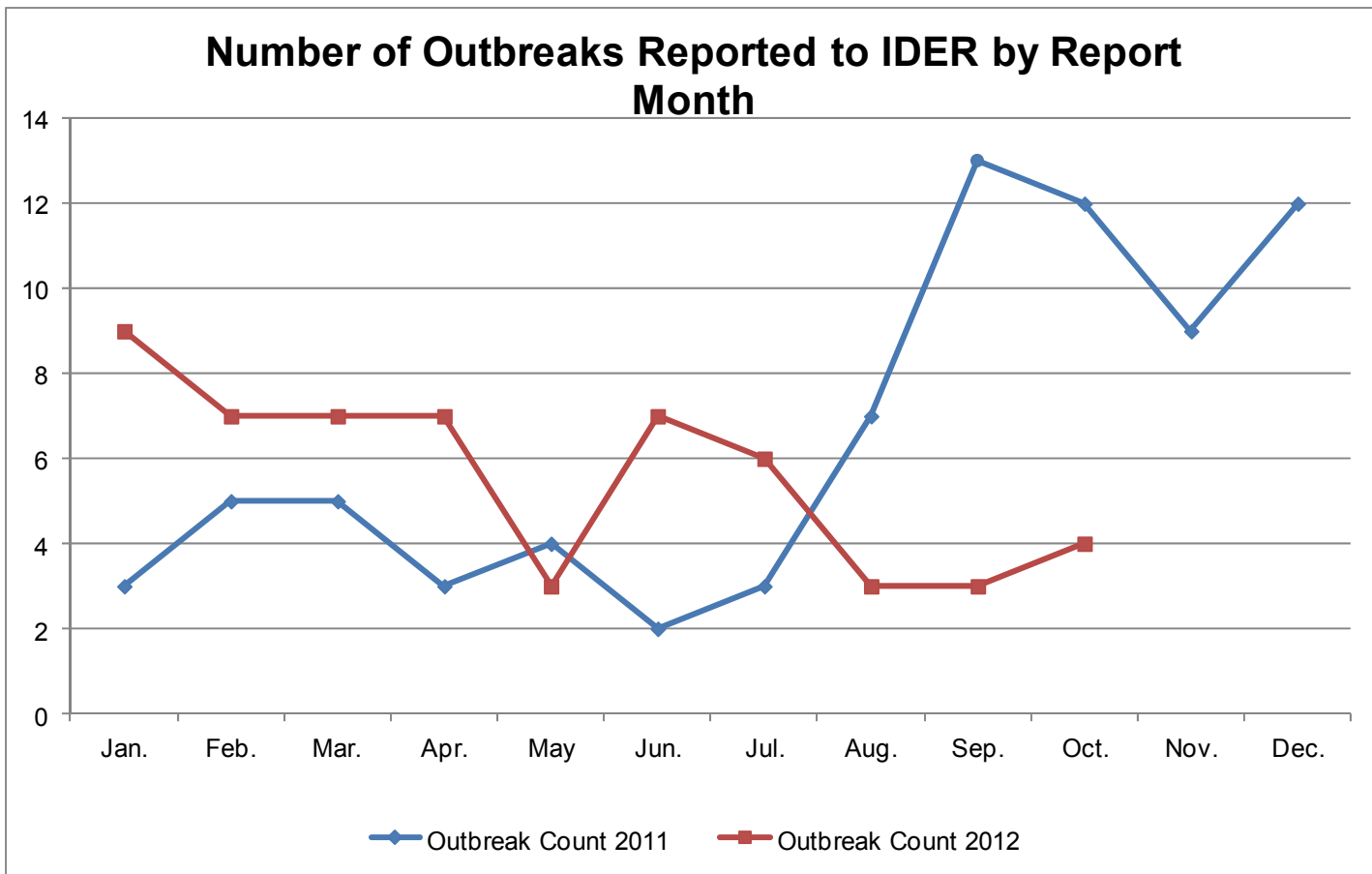
†Status includes when local health department completes investigation, approves the case, or when the case is closed by state

‡ Time from public health report date to when local health department accepts case

Month reported to EpiTrax - October 2012							
Disease	State Case Status					Grand Total	Average 2009—2011
	Confirmed	Probable	Suspect	Under Investigation	Not a Case		
	Count	Count	Count	Count	Count	Count	Count
<i>Anaplasma phagocytophilum</i> (f. HGE)	0	0	0	1	1	2	1
Brucellosis	0	0	0	1	0	1	0
Campylobacteriosis	13	0	8	29	0	50	51
Cryptosporidiosis	8	2	0	5	0	15	11
Ehrlichiosis, <i>Ehrlichia chaffeensis</i> (f. HME)	1	0	0	1	0	2	2
Giardiasis	7	0	1	4	0	12	13
<i>Haemophilus influenzae</i> , invasive disease (Including Hib)	0	0	0	0	2	2	1
Hansen disease (Leprosy) (<i>Mycobacterium leprae</i>)	0	0	1	0	0	1	0
Hepatitis A	2	1	1	22	24	50	31
Hepatitis B virus infection, chronic	0	25	0	20	4	49	46
Hepatitis B, acute	2	1	0	0	1	4	7
Hepatitis C virus, past or present	119	0	4	52	2	177	154
Hepatitis C, acute	1	0	0	2	0	3	1
Hepatitis Delta co- or super-infection, acute (Hepatitis D)	0	0	0	1	0	1	0
Legionellosis	0	0	0	3	1	4	2
Listeriosis	0	0	0	1	0	1	2
Lyme Disease (<i>Borrelia burgdorferi</i>)	0	0	0	12	11	23	20
Meningitis, bacterial other	0	0	0	2	0	2	2
Meningitis, other fungal	0	0	0	1	0	1	0
Meningococcal disease (<i>Neisseria meningitidis</i>)	0	0	0	1	1	2	1
Mumps	0	0	1	0	2	3	4
Outbreak Case - Unknown Etiology	0	0	0	1	0	1	0
Parapertussis	0	0	0	2	0	2	n/a
Pertussis	24	42	6	84	76	232*	51
Q Fever (<i>Coxiella burnetii</i>), Chronic	0	0	0	1	0	1	0
Rabies, animal	3	0	1	7	3	14	3
Rubella	0	0	0	1	0	1	2
Salmonellosis	35	0	0	1	0	36	39
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	16	0	1	4	0	21	11
Shigellosis	13	1	0	0	0	14	15
Spotted Fever Rickettsiosis (RMSF)	0	1	0	14	7	22	19
St. Louis encephalitis virus non-neuroinvasive disease	0	0	0	1	0	1	0
<i>Streptococcus pneumoniae</i> , invasive disease	10	0	0	3	0	13	5
Tetanus (<i>Clostridium tetani</i>)	0	0	0	1	0	1	0
Tularemia (<i>Francisella tularensis</i>)	0	0	0	2	0	2	1
Varicella (Chickenpox)	2	22	0	14	13	51	47
Vibriosis (non-cholera <i>Vibrio</i> species infections)	1	0	0	0	0	1	0
West Nile virus neuroinvasive disease	0	0	0	1	0	1	1
West Nile virus non-neuroinvasive disease	0	2	7	19	4	32	1
Grand Total	257	97	31	314	152	851	

* Increase in case count is due to outbreak(s).

MONTHLY OUTBREAK SUMMARIES



Facility Type	Organism	Transmission	County	Outbreak Status	Reported Date
Unidentified	Shiga toxin-producing <i>Escherichia coli</i> (STEC)	Food	Riley	Active	10/01/2012
Grocery Store	Unknown-GI	Food	Wyandotte	Active	10/03/2012
Hotel	Legionellosis	Indeterminate / Other / Unknown	Thomas	Active	10/12/2012
Childcare Center	Shiga toxin-producing <i>Escherichia coli</i> (STEC)	Person-to-Person	Mitchell	Active	10/26/2012