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Background:
Kansas requires students be up-to-date (UTD) for DTaP, Polio, MMR, Varicella, and Hepatitis B vaccinations. Schools can exclude non-compliant students without permissible exemptions. The rate of unimmunized, non-exempt students is known as the vaccine exemption gap (VEG), and national and state-level rates are unknown. A large VEG rate increases risk for outbreaks of vaccine preventable diseases (VPDs).

Objectives:
The aim of this study was to understand the scope and factors for VEG in Kansas among kindergarteners between 2014-2015 and 2016-2017.

Methods:
Kansas’ Kindergarten Immunization Assessment provided individual-level data through random sample of immunization records based on county and school type, school-level data on exclusion policy through consensus surveys 2014-2015 to 2016-2017 academic years. Records with history of varicella or an exemption for any vaccines and records from schools without exclusion information were excluded from analysis. VEG rates were analyzed by school year, school type (public, private), exclusion policy, and county type (rural, dense, urban). Frequency, chi-square analysis, odds ratio (OR), and 95% confidence intervals (95%CI) were performed using SAS® 9.4.

Results:
24,609 records did not have an exemption. Varicella (10.9%) and MMR (10.1%) had highest VEG rates. Private schools and those without exclusion policies had higher VEG rates for all vaccines (0.1% to 2.0% and 0.5% to 3.9%, respectively). Analysis revealed that only private schools (OR 1.52, 95%CI 1.36-1.69) and schools without an exclusion policy (OR 1.46, 95%CI 1.34-1.58) had significantly increased odds of having more VEG students.

Conclusion:
Observed increases in VEG indicate a decrease in herd immunity, especially for Varicella and MMR among Kansas children, which could potentially result in more or larger VPD outbreaks. Private schools and those without exclusion policies had higher VEG rates for all vaccines. More schools enforcing exclusions of non-compliant students without an exemption could decrease VEG and protect more kindergarteners from VPDs.
Avoiding Vaccines for School – how we don’t let it happen
Sheila Palevsky

Background:
The New York City (NYC) Office of School Health (OSH), a collaborative effort of the NYC Department of Education and the NYC Department of Health and Mental Hygiene, has the responsibility to assure that all children in the NYC public schools are in compliance with state immunization regulations. Students with documentation of valid medical reasons for non-vaccination are exempted from such requirements.

Objectives:
To characterize the requests for medical exemptions from immunization that are submitted to the NYC OSH.

To improve compliance with state immunization regulations.

Methods:
For the school years 2013-2014 through 2016-2017, all submissions for requests for medical exemption were reviewed by a single expert to determine their validity using standards from the Centers for Disease Control and Prevention Advisory Committee on Immunization Practices and the Academy of Pediatrics.

Data were collected regarding the final disposition of each request based on documents submitted to the schools and, when necessary, by a conversation with the treating physician(s).

Documentation of immunity to measles, mumps, rubella, varicella, hepatitis B, and poliomyelitis types 1, 2 and 3, or a clinician verified history of varicella disease which can be used in lieu of vaccination to satisfy the immunization requirements were not considered medical exemptions in this analysis.

Results:
The number of reviews has increased annually. The most common reasons for exemption were organ transplants, chemotherapy for malignancy, use of biological agents and other immunosuppression or immunodeficiency. Medical exemption requests increased 76% from 2013-2014 through 2016-2017. Parental refusal of vaccine increased 41% while violation of standard vaccine intervals increased to 108 from 6.

Conclusion:
Our data support the need for a disinterested expert as the reviewer of all requests for medical exemption from state immunization mandates. Such review identifies non-valid excuses of vaccine avoidance which can undermine good public health practices.
The Effect of PA School Immunization Requirement Changes in Philadelphia County
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Background:
In 2017, Pennsylvania introduced changes to school immunization requirements including a 2nd dose of MCV4 for 12th graders and documented receipt of required vaccines within 5 days (previously 8 months) of first day of school.

Objectives:
To evaluate policy change impact on vaccine administration for routinely recommended vaccines among school-aged children, particularly middle and high school students, in Philadelphia. We hypothesized increased up-to-date (UTD) rates for required, but not recommended, vaccines.

Methods:
This cross-sectional study measured differences in number and type of vaccines delivered before and after school requirement implementation among 11-18 year olds for all routinely recommended vaccines using the Philadelphia immunization registry (KIDS IIS). We compared proportion administered for required and recommended vaccines overall and by month in 2016 (pre-policy) vs 2017 (post-policy) using Chi Square tests.

Results:
As of Nov 30th 2017 there were 240,142 11-18 year olds in KIDS IIS and 122,418 and 114,254 vaccine doses administered to this age group in 2016 and 2017, respectively. The majority of doses across antigens were administered in August and September, with a significant increase in number of doses for MCV4 and MenB (100% and 64% respectively) in 2017. Among all administered doses, a significantly (P<0.001) higher proportion of MCV4 (29.0% vs 26.1%) and MenB (11.9% vs 5.9%) and a lower proportion of HPV (32.2% vs 40.2%) were delivered in 2017 compared to 2016. When stratifying by age group, these differences were not significant among 11-12 year olds.

Conclusion:
After implementation of new school requirements, there were significant increases in proportions of administered doses for required vaccines in older vs younger adolescents, likely reflecting focused outreach for the new MCV4 requirement. However, similar increases were not observed for all recommended vaccines. School immunization requirements can help promote immunization but implementation may also miss opportunities to ensure receipt of all recommended vaccines.