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Position Statement

Adolescent Vaccines

SUMMARY

It is the position of the Kansas School Nurses Organization (KSNO) that school requirements for adolescent vaccination improves immunization rates and that the long-term health of Kansans would likely improve with the expansion of vaccine requirements for adolescents. Historically, vaccine requirements for school attendance focused on diseases known to spread rapidly in public settings (e.g. polio, measles, mumps, rubella, Pertussis, etc.). With the development of new vaccines, capable of preventing diseases such as hepatitis, meningitis, and certain cancers, schools are an ideal setting for the promotion of lifelong health in collaboration with state and public health agencies.

HISTORY

As recent as 2006, the U.S. recommended only one vaccine during the adolescent years - a tetanus and diphtheria (Td) booster (National Foundation for Infectious Diseases [NFID], 2016). In 2005, the Tdap (tetanus, diphtheria, and Pertussis) vaccine was licensed and soon became the recommendation of the Advisory Committee on Immunization Practices (ACIP) for the adolescent booster in place of Td (Broder et al., 2006). Kansas implemented the recommendation, requiring all students aged 12 years have one dose of Tdap beginning with the 2009-2010 school year (Kansas Department of Health and Environment [KDHE], 2017). Also in 2005, the ACIP recommended that children 11 to 12 years of age receive one dose of meningococcal conjugate vaccine (MenACWY) with a booster at age 16 years (KDHE). Similarly, HPV was licensed in 2005, providing protection against the most common strains associated with cervical cancer (KDHE). The vaccine was initially licensed for use only in females and required a three dose series (Petrosky et al., 2015). However, in 2010, HPV became licensed for males, and most recently is available as a two dose series when administered

prior to age 15 (Centers for Disease Control and Prevention [CDC], 2017). While recommended, Kansas does not yet require students to receive the meningococcal or the HPV vaccines with regard to school attendance.

DESCRIPTION OF ISSUE

Healthy People 2020 provides five goals and statistics related to vaccines for adolescents ages 13 to 15 years (see Table 1). In addition, Healthy People 2020 includes an influenza vaccination goal of 80% for *all* school-aged children and adolescents. The only vaccine meeting and exceeding the Healthy People 2020 Goal nationally is Tdap, and likewise Kansas exceeds the goal for Tdap with a vaccine compliance rate of 87.3% (Kansas Immunization Coalition [KIC], 2017). See Table 1.

Table 1: Healthy People 2020 Goals for Adolescent Vaccination

Adolescent Vaccine	Healthy People 2020 Goal	Kansas in 2015	U.S. in 2012
Tdap (tetanus, diphtheria, Pertussis)	80% at least one dose	Required for school	85.3%
Varicella	90% at least two doses	Required for school	76.8%
Meningococcal conjugate	80% at least one dose	64.9%	73.8%
Human papillomavirus for females	80% at least three doses for females	28.6%	28.1%
Human papillomavirus for males	80% at least three doses for males	14.6%	6.9%

As Table 1 depicts, both Tdap and Varicella are required for attendance in Kansas schools. However, neither meningococcal or HPV vaccines are required for attendance in Kansas Schools. For several years Kansas lagged behind national statistics for uptake of meningococcal and HPV vaccination. In fact, as recently as 2014, only 38.3% of Kansas girls had received one dose of HPV vaccine increasing to over 62% in 2016 (KIC, 2017). The percentage of adolescents completing the HPV series remains low, both in our state and nationally.

KDHE’s analysis of the Behavioral Risk Factor Surveillance System (BRFSS) found that the factors significantly affecting the odds of a child receiving Tdap were medical insurance, parental education level, and annual household income (2017). Further, they found that the presence of medical insurance decreased the odds of children receiving MenACWY; whereas, children living in urban counties were identified as having

significantly higher odds of receiving MenACWY and HPV, indicating that access to care may be a barrier for children living in more rural areas of the state (KDHE, 2017). Lastly, KDHE reported that race and gender were also associated with receipt of MenACWY and HPV, respectively. Females were significantly more likely to receive the HPV vaccine than males, and black adolescents were significantly more likely to receive MenACWY (KDHE, 2017).

The HPV virus is spread by sexual contact with approximately 14 million people, including teens, becoming infected every year in the U.S. (CDC, 2015a). Infection with HPV can cause cervical, vaginal, and vulvar cancers in women and penile cancer in men. In both sexes, the virus is found to cause anal cancer, throat cancer, and genital warts (CDC, 2015a). It is important that individuals are vaccinated prior to engaging in sexual activity, thus the current recommendation of ages 11 or 12. The HPV vaccines has been studied carefully with no serious safety concerns and is recommended not only by the CDC but also by the American Academy of Family Physicians, the American Academy of Pediatrics, and the Society for Adolescent Health and Medicine (CDC, 2015a).

Meningococcal infection, caused by *Neisseria meningitidis* bacteria, occurs much more rarely in our population than HPV infection, yet it is very lethal, with 10 to 15% not surviving the initial infection even with treatment (CDC, 2015b). Further, of those that do survive meningococcal infection, 20% will have a serious health defect such as amputation, deafness, and brain damage (CDC, 2013). The bacteria spread from person to person when living in close quarters and when having lengthy contact with someone's saliva such as through kissing or coughing. Adolescents and young adults are at increased risk of infection likely due to irregular sleeping and eating patterns common during this stage of life. There are at least 12 types (called serogroups) of *Neisseria meningitides*; serogroups A, B, C, W, and Y cause most meningococcal disease. Two types of meningococcal vaccines are currently available; one protects against the types A, C, W, and Y and the second against type B (CDC, 2017).

The Tdap vaccine is a combination vaccine protecting against three different bacterial infections. The beginning letter "T" refers to tetanus infection which causes painful tightening of the muscles of your body (CDC, 2015d). The second pathogen, Diphtheria, causes a thick covering in the back of the throat and as a

result, can lead to problems breathing, paralysis, heart failure, and even death (NASN, 2017). Lastly, Pertussis, more commonly referred to as whooping cough, leads to coughing spells, pneumonia, seizures, brain damage, and particularly in infants, can lead to death (CDC, 2015c).

RATIONALE

Due to a disparity in the uptake of recommended adolescent vaccines, the National Foundation for Infectious Diseases (NFID) convened a roundtable in February of 2016. According to NFID, the current low rate of vaccination for certain diseases leaves “millions of adolescents vulnerable to serious health risks from flu and meningitis, as well as serious long-term risks of human papillomavirus (HPV) infection including oropharyngeal, cervical, and other anogenital cancers (2016, pg 2).” Among recommendations identified to improve adolescent vaccination rates is the establishing of an additional adolescent vaccination at age 16 to facilitate the administration of additional doses of HPV and meningococcal vaccines. Other recommendations center on ongoing communication and timely education to and between healthcare providers, parents, and adolescents and the implementation of systems to make adolescent vaccination routine, avoiding any missed opportunities to vaccinate (NFID).

The National Association of School Nurses provides a resource, Stats4Vax, which includes strategies and tools for school nurses to promote adolescent vaccines (2017). For example, there are many opportune times during the school year for conversations and communications with both parents and teens (back to school, parent-teacher conference, health fairs, when communicating about sport physicals, etc.). Further, school nurses can post information on the school’s website, email letters, and use social media clips to spread the message of the importance of adolescent vaccines, both those that are required for school, and those that are recommended including annual vaccination for influenza.

Lastly, Kansas statute 72-5215 requires school boards to provide to parents and guardians of students in grades six through 12 information on recommended immunizations at the beginning of each school year. Specifically, the statute states that the information on immunization shall include:

(1) A list of sources for additional information; and

(2) related standards issued by the national centers for disease control and prevention.

In addition, the statute states that departments of health and environment “shall provide assistance, if requested by a school board, and information on immunizations applicable to school age children to school boards for the purposes of this section, and shall not charge the school board for such assistance or information.” Thus, Kansas schools are required to assist in the promotion of all recommended adolescent vaccines.

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Adopted July, 2018

Acknowledgement of Author

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