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VACCINE UPDATE

Addressing vaccine hesitancy in the pharmacy

Stephanie J. Rawson, James H. Conway, Mary S. Hayney

The reluctance of some to be vaccinated, termed “vaccine hesitancy,” has contributed to decreasing immunization coverage in some communities and has likely contributed to outbreaks of vaccine-preventable diseases. According to the Centers for Disease Control and Prevention (CDC), measles outbreaks in 2015 were related to 68 unvaccinated US residents, where 29 of them stated religious or philosophic reasons for not being vaccinated.¹ Immunization rates for the routinely recommended influenza and pneumococcal vaccines fall far below their *Healthy People 2020* goals of 70% and 60% coverage, respectively. Influenza coverage for the 2014–2015 season was reported to be 47%^{2,3} and pneumococcal coverage in high-risk populations aged 19 to 64 years for 2013 was only 21%.⁴

Vaccine hesitancy is a continuum of behavior, with most falling somewhere between acceptance of all and refusal of all vaccines available.⁵ To address vaccine hesitancy, pharmacists should be able to understand and recognize it. The World Health Organization (WHO) provides the following definition⁶: “Vaccine hesitancy refers to delay in acceptance or refusal of vaccines despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place, and vaccines. It includes factors such as complacency, convenience, and confidence.”

Pharmacists play an important role not only in delivery of vaccines, but advocacy as well. This article provides valuable information for pharmacists and pharmacies to reference when confronting vaccine hesitancy.

The Strategic Advisory Group of Experts (SAGE) on Vaccine Hesitancy, established to serve as an advisory group to WHO, created a matrix model to help

providers determine the underlying reasons that a person may be reluctant to receive a vaccine.⁵ There are 3 main categories of determinants: contextual influences, individual or group influences, and vaccine-specific issues. Contextual influences refer to external factors that may affect a person's perception of vaccines, such as politics, religion, or culture. Individual or group influences are more personal, and related to how one's friends, family, or own individual experience with vaccines may affect behavior towards vaccines. Vaccine-specific issues are dependent on the vaccine in question, and may simply be that a vaccine is too expensive or not available. Using the matrix can help identify the root cause of vaccine hesitancy in a person, and help providers better understand why a person may be reluctant to receive a vaccine.

Although the SAGE working group has stated that communication is not a determinant of vaccine hesitancy,⁶ poor communication is blamed for causing confusion and doubt in the public's understanding of vaccines.⁷ Pharmacies should work to develop their own communication plans. The SAGE working group has provided several recommendations on how to communicate with persons reluctant to receive vaccines, as well as considerations to make when developing a communication plan:

1. Anticipate anti-vaccine remarks or behaviors from patients the pharmacy serves, and plan out responses in advance. This helps pharmacists to provide a clear and consistent message to patients.
2. Understand the population the pharmacy serves. Providers should consider the determinants of vaccine hesitancy identified to deliver a tailored and persuasive message.
3. Providing knowledge on vaccines is not sufficient—a communication plan must work to identify underlying issues. Pharmacists should then determine what actions can be made to resolve these issues.
4. Consider using a variety of methods to deliver the communication plan. Marketing and social media have been effective in improving vaccine uptake in several immunization program campaigns, but results are unpredictable and not fully understood.⁸ The SAGE working group advises using multiple delivery methods, with careful consideration toward the targeted population.

The SAGE working group also conducted a systematic review to identify programs or strategies that were effective in managing vaccine hesitancy.⁹ Their results indicate that programs



Send your immunization questions to the *JAPhA* Contributing Editors who coordinate the **Vaccine Update** column:

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were most effective at improving vaccine use (more than 25% increase in vaccine uptake) when they were multifocal and included the following goals:

- Improve awareness of vaccines.
- Increase access to vaccines.
- Provide a tailored message to hesitant populations.
- Involve community leaders in advocacy.

Specifically increasing knowledge and understanding of vaccines was most successful with education-focused programs. Interventions that were not as effective (less than 10% increase in vaccine uptake) include poster or website advertisements, providing cash-based incentives, modifying clinic hours, or improving data collection. Ultimately, interventions were most successful when they targeted specific populations

and were focused on addressing specific problems.

Vaccine hesitancy is a growing concern, and should be taken seriously by health care providers; illness or death from a vaccine-preventable disease is not acceptable. All pharmacies should be equipped with a vaccination program that includes a communication plan targeted toward a specific population or issue. Every pharmacist should know how to identify vaccine hesitancy and have a plan of action ready to address it when confronted (see [Vaccine Hesitancy Case](#)).

Vaccine Hesitancy Case

Sarah is an 11-year-old girl who visits the pharmacy, accompanied by her mother, after an appointment with her physician. Sarah's physician suggested she start the human papillomavirus (HPV) vaccine series, but her mother is not convinced that Sarah needs it. Her mother wants to know your opinion, specifically how common HPV is and how often it causes cancer. She is also concerned that there will be more side effects related to a new "cancer vaccine." She wants to know whether the risks are worth it and whether the vaccine will be effective.

Concern: Often, disease prevalence is poorly understood, and patients may not understand the link between infection and the morbidity caused by the agent.

Communication plan: CDC research shows that providing straightforward messages works well: "Almost everyone is infected by HPV at some point in their life." HPV infections are more likely to become chronic when they are acquired during adolescence, and can lead to a variety of cancers in men and women, including cervical, vaginal, vulvar, penile, anal, and increasingly oropharyngeal cancer in both men and women. "Approximately 26,000 cases of these cancers occur each year, many of them preventable by the HPV vaccine." Emphasizing that HPV vaccine is a cancer prevention tool is critical and resonates with families.

Concern: Patients are frequently concerned about the potential side effects of vaccines. It is important for them to know how much experience there is with these particular products.

Communication plan: More than 60 million doses of HPV vaccine have been administered in the US since 2006, and more than 200 million worldwide. Explaining what they can expect can help patients to feel reassured. "The HPV vaccine is like other vaccines—the most common side effect is mild pain or redness in the arm where it was given."

Remember, Vaccine Information Statements (VIS forms) are available for all vaccines to help provide accurate information. They can be downloaded at <http://www.cdc.gov/vaccines/hcp/vis/current-vis.html>.

Concern: Patients want to know that the vaccine they are receiving is effective.

Communication plan: HPV vaccines have been routinely recommended in the US since 2006, and have been studied for more than two decades. "In clinical trials, the vaccine was demonstrated to be extremely effective. Multiple studies have also shown significant reductions in HPV infections."

Adapted from Tips and Time-savers for Talking with Parents About HPV Vaccine. Centers for Disease Control and Prevention website. <http://www.cdc.gov/vaccines/who/teens/for-hcp-tipsheet-hpv.html>. Updated August 26, 2013. Accessed January 29, 2016.

References

1. Clemmons N, Gastanaduy P, Fiebelkorn AP, et al. Measles—United States, January 4–April 2, 2015. *MMWR Morb Mortal Wkly Rep*. 2015;64(14):373–376.
2. Santibanez TA, Kahn KE, Zhai Y, et al. *Influenza. Flu vaccination coverage, United States, 2014–15 influenza season*. Atlanta, GA: Centers for Disease Control and Prevention; 2015. Available at: <http://www.cdc.gov/flu/fluview/coverage-1415estimates.htm>. Accessed October 11, 2015.
3. US Department of Health and Human Services. *Healthy People 2020. Topics and objectives—immunization and infectious diseases [serial online]*; 2015. Available at: <http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives>. Accessed October 11, 2015.
4. Williams WW, Lu P-J, O'Halloran A, et al. Vaccination coverage among adults, excluding influenza vaccination—United States, 2013. *MMWR Morb Mortal Wkly Rep*. 2015;64:95–102.
5. Macdonald NE. Vaccine hesitancy: Definition, scope and determinants. *Vaccine*. 2015;33(34):4161–4164.
6. Meeting of the Strategic Advisory Group of Experts on Immunization, October 2014—conclusions and recommendations. *Wkly Epidemiol Rec*. 2014;89:561–576.
7. Goldstein S, Macdonald NE, Guirguis S. Health communication and vaccine hesitancy. *Vaccine*. 2015;33(34):4212–4214.
8. Nowak GJ, Gellin BG, Macdonald NE, Butler R. Addressing vaccine hesitancy: the potential value of commercial and social marketing principles and practices. *Vaccine*. 2015;33(34):4204–4211.
9. Jarrett C, Wilson R, O'Leary M, Eckersberger E, Larson HJ. Strategies for addressing vaccine hesitancy—a systematic review. *Vaccine*. 2015;33(34):4180–4190.

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