Influenza Prevention Update: Examining Common Arguments Against Influenza Vaccination

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Following last year’s season of low activity, influenza is surging across the country and as of January 5 has claimed the lives of 20 children.1 With influenza intensifying, it is important to review essential interventions that prevent influenza transmission at home, at work, and in health care facilities.

Several important actions should be performed by everyone to prevent the spread of this potentially deadly pathogen. Basic infection control practices such as regularly performing hand hygiene, observing respiratory hygiene and cough etiquette (“cover your cough”), and avoiding others and crowded areas when ill (social distancing) are important prevention methods for any contagious respiratory tract infection. Additional measures to limit transmission of influenza in health care settings are also essential. These include screening patients on arrival to assess for respiratory symptoms, placing a surgical mask on potentially infected individuals, using isolation precautions for those suspected of having or confirmed to have a respiratory tract infection, keeping infected patients away from other patients, and ensuring that visitors and health care personnel (HCP) do not visit or work while ill (ie, “presenteeism”).2

Influenza, however, is unique among respiratory viral pathogens in that another effective intervention to prevent transmission exists: vaccination. Annual influenza vaccination has been available in the United States since 1945 and has been recommended for persons at high risk of influenza complications since 1960. Unlike many pathogens, the predominant circulating influenza strains vary from year to year, affecting the intensity and severity of the influenza season as well as vaccine effectiveness. According to a recent systematic review and meta-analysis of influenza vaccine protection, there was 59% effectiveness of the trivalent influenza vaccine in adults aged 18 to 65 years and a higher effectiveness (83%) of the live-attenuated vaccine (LAIV) in children.3 Although not at levels of other vaccines, influenza vaccination provides some protection and may prevent complications due to influenza such as pneumonia, hospitalizations, and death. Recent studies in children have demonstrated that the inactivated influenza vaccine is 55% effective against any illness due to laboratory-confirmed influenza but 73% effective against any moderate or severe disease due to influenza.4 Hence, vaccinated patients may still develop influenza infection but are likely to be at lower risk for its associated complications.

However, vaccination rates, particularly for individuals of high risk (eg, due to comorbid conditions) and high transmission risk (eg, HCP who have frequent contact with high-risk patients), remain unacceptably low. For the 2008-2009 influenza season, only 28.2% of all adults aged 18 to 64 years and 41.4% of those with a high-risk condition received an influenza vaccine.5 While rates among HCP are increasing (in part due to policies whereby vaccination is a condition of employment and credentials), one-third of HCP were not vaccinated last year, potentially increasing the risk of transmission to their patients, coworkers, families, and friends.6 Assessments of why people refuse influenza vaccination often reveal similar themes. We provide perspectives to some of the reasons.

“The vaccine does not work.” Even though influenza vaccine is not as effective as other common vaccines, “not as effective” does not mean “not effective.” The Centers for Disease Control and Prevention’s midyear assessment of this season’s influenza vaccine’s effectiveness is 62% (95% CI, 51%-71%) for the prevention of medically attended acute respiratory illness.7 There also is a relatively good match between circulating and vaccine strains and, as a result, some mitigation of influenza morbidity. A prevention measure that reduced the risk of a serious outcome by 60% in most instances would be a noted achievement; yet for influenza vaccine, it is seen as a “failure.” Clearly, a better influenza vaccine, particularly a universal antigen vaccine that protects over several seasons, is needed, but this should not be a reason to neglect the current vaccine.

“The vaccine causes the flu.” The currently licensed influenza vaccines are LAIV and the inactivated vaccine. Neither vaccine can cause influenza infection. The LAIV is an attenuated live viral vaccine with a temperature-sensitive adaptation that precludes replication of the virus at human

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core body temperatures. Secondary transmission from a person recently vaccinated with LAIV resulting in clinically important illness has not been reported. The inactivated vaccine contains only killed virus and viral antigens and also cannot cause influenza infection. Placebo-controlled randomized trials have not noted a higher frequency of systemic reactions in vaccine recipients when compared with those receiving placebo. Undoubtedly, people may develop an influenza-like illness or even laboratory-confirmed influenza after vaccination. This does not mean the illness was vaccine induced but rather was likely due to a noninfluenza viral infection (as other viruses, such as respiratory syncytial virus, also circulate during influenza season), exposure to influenza before immunity from the vaccine had time to develop, or the fact that the vaccine is not 100% effective.

“I have an allergy to eggs.” For many years, egg allergy was a contraindication to influenza vaccination, and those with severe allergic reactions (ie, anaphylaxis) should still avoid influenza vaccination. However, recent evidence-based guidance advises that all other egg-allergic patients should receive influenza vaccination based on the rationale that the risks of not vaccinating outweigh the risks of vaccinating these individuals as long as basic precautions are followed. Specifically, the Advisory Committee on Immunization Practices advises that those with an egg allergy who have only experienced hives after egg exposure should receive influenza vaccine with postvaccination observation for 30 minutes. However, egg-allergic patients with a history of angioedema, respiratory distress, nausea, vomiting, or a reaction that required epinephrine or emergency medical attention after egg exposure should be referred to an allergist for further evaluation.

“I cannot get the vaccine because I am pregnant or have an underlying medical condition or because I live with an immunocompromised person.” Refusing vaccination because of underlying conditions such as pregnancy or history of organ transplantation may actually harm those at greatest risk of complications from influenza. For years, these groups have been specifically recommended for influenza vaccination because the vaccine is safe in these persons and can prevent serious morbidity and mortality. In such instances, it is important for clinicians to recognize the individual’s desire to prevent harm in close contacts but to redirect this good intention by emphasizing the morbidity due to transmitted influenza.

“I never get the flu! I am healthy.” This rationale neglects one of the major reasons vaccination is recommended. While some people, such as healthy adults, may not develop a classic, severe influenza-like illness when infected (and a substantial proportion may have minimal to no symptoms), they likely still can transmit the virus to others. Refusing vaccination because of a perceived low risk ignores the potential risk to close contacts, especially those who cannot get vaccinated or who will not mount a strong immune response to the vaccine and rely on herd immunity for protection. This risk has driven many health care facilities to require influenza vaccination for their HCP as a professional and ethical intervention to protect patient safety and promote a safe workplace.

The increasing incidence of influenza across the United States should remind all clinicians about the key methods for transmission prevention, including vaccination. Misperceptions about influenza vaccine are common and often deeply rooted; for the protection of patients, colleagues, and loved ones, these perceptions must continue to be addressed, and the approach should be to immunize, immunize, immunize!

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