

## VIC Influenza Webinar, Sept. 17, 2018: Questions

### Influenza Activity

- 1. Other than the novel A viruses seen this summer has there been any other cases in the past month? If yes, what states?**

Low levels of influenza virus and influenza related disease activity have been reported this summer. Small numbers of both influenza A subtypes (H3N2 and H1N1) and influenza B lineages (Yamagata and Victoria) have been reported. For state-level data, please visit FluView Interactive (<https://www.cdc.gov/flu/weekly/fluviewinteractive.htm>), an online application that allows the user to view data for the time period and geographic location of interest. These data are updated weekly.

- 2. Can you talk about the Southern hemisphere 2017-2018 flu season and compare that to the Northern hemisphere. So when people ask what happened in Australia over the summer is it equivocal? Thank you.**

Reported Southern Hemisphere influenza activity has been relatively low and fairly mild, with H1N1 viruses predominating in most regions. Influenza is unpredictable therefore what happens in the Southern Hemisphere is sometimes predictive of what will happen here but sometimes it is not. We do know that influenza seasons is coming and we will likely have co-circulation of H1N1, H3N2 and B viruses.

### Burden Averted

- 3. How is illness averted determined?/ How are "illnesses prevented" calculated?**

The annual estimates of influenza vaccination coverage by month during each season and the final end-of-season vaccine effectiveness measurements were used to estimate how many persons were not protected by vaccination during the season and thus were at risk for these outcomes.

The rate of each outcome among persons at risk was then used to estimate the number of influenza-associated outcomes that would have been expected in the same population if no one had been protected by vaccination. Finally, the averted outcomes attributable to vaccination were calculated as the difference between outcomes in the hypothetical unvaccinated population and the observed vaccinated population.

Estimates of 2016–2017 influenza vaccination coverage by month from July 2016 through April 2017, were based on self-report or parental report of vaccination status using data from the National Immunization Survey for children aged 6 months-17 years and Behavioral Risk Factor Surveillance Survey data for adults aged  $\geq 18$  years.

Vaccine effectiveness estimates for the 2016–2017 season were derived from the US Influenza Vaccine Effectiveness Network, a group of five academic institutions that conduct annual vaccine effectiveness studies. The network estimates the effectiveness of vaccination for preventing real-time reverse transcription polymerase chain reaction-positive influenza among persons with acute respiratory illness of  $\leq 7$  days duration seen in hospitals, emergency departments, or outpatient clinics in communities in four states.

Calculations were stratified by month of the year to account for annual variations in the timing of disease and vaccination and then summed across the whole season. The prevented fraction was calculated as the number of averted illnesses divided by the total illnesses that would have been expected in an unvaccinated population.

## Vaccine Strain Selection

### **4. Why was the B/Victoria lineage included in this year's trivalent vaccine rather than B/Yamagata which has been so much more prevalent?**

Twice a year, the World Health Organization (WHO) organizes a consultation with the Directors of the WHO Collaborating Centers, essential regulatory laboratories and representatives of key national laboratories and academies. They review the results of surveillance, laboratory, and clinical studies, and the availability of vaccine viruses and make recommendations on the composition of the influenza vaccine. For the 2018-19 season, it is estimated that about eighty percent of influenza vaccines available in the U.S. will be quadrivalent, including an A/H3N2, A/H1N1, B/Yamagata and B/Victoria lineage viruses. The decision to include a B/Victoria lineage virus in the small proportion of vaccines that are trivalent was due to the substantial and increasing proportion of B/Victoria viruses that are antigenically different than previously circulating B/Victoria viruses therefore resulting in little immunity to these viruses in the population. In addition, some studies have shown cross protection across influenza B lineages for adults.

## Vaccine effectiveness

### **5. Is it better for those > or = 65 to receive the quadrivalent or the high dose trivalent vaccine?**

ACIP recommends annual influenza vaccination for everyone 6 months and older with any licensed, age appropriate flu vaccine (IIV, RIV4, LAIV4) with no preference expressed for any one vaccine over another. A summary of recent published research regarding some of the vaccine types available for older adults is included in ACIP's 2018-2019 influenza prevention and control recommendations (<https://www.cdc.gov/mmwr/volumes/67/rr/rr6703a1.htm>). These studies compare adjuvanted IIV3, high dose IIV3, or RIV4 to comparable unadjuvanted standard-dose vaccines (that is, adjuvanted and high dose IIV3 have been compared with unadjuvanted standard-dose, IIV3; and RIV4 has been compared with unadjuvanted, standard-dose IIV4). High dose IIV3 has not been directly compared with standard dose IIV4; and adjuvanted, high-dose, and RIV4 have not been directly compared with one another. . Individuals with questions about which vaccine is best for them should talk to their doctor or other health care professional.

### **6. Do you have any data on the difference between egg-based and cell-based vaccine as far as effectiveness. Thank-you**

While the use of cell-grown reference viruses and cell-based technology may offer the potential for better protection over traditional, egg-based flu vaccines because they result in vaccine viruses that are more similar to flu viruses in circulation, there are not sufficient data yet to support this. There is no preferential recommendation for one flu vaccine over another.

### **7. Can you provide any data on comparative efficacy of cell cultured vaccine (Flucelvax) vs high dose IIV?**

While the use of cell-grown reference viruses and cell-based technology may offer the potential for better protection over traditional, egg-based flu vaccines because they result in vaccine viruses that are more similar to flu viruses in circulation, there are not sufficient data yet to support this. There is no preferential recommendation for one flu vaccine over another.

## Waning Immunity (same answer to all 3 questions)

### **8. With 2009 H1N1 strain being included in the vaccine for nearly 10 years, are we learning more about waning immunity. Or, is using the same strain providing an effective boosting to the immune system to provide long lasting immunity?**

### **9. Study published in Sept. 10 issue of Clinical Infectious Diseases regarding flu vaccine waning within weeks of administration. From a public health perspective, how do we address this? Public health has worked hard to encourage early vaccination stating that flu vaccine efficacy lasts the whole season.**

**10. There was a publication last week that VE decreases with time since getting the vaccine. What is your view on this data?**

Multiple studies conducted over different seasons and across flu vaccine types and influenza virus subtypes have shown that the body's immunity to influenza viruses (acquired either through natural infection or vaccination) declines over time. The decline in antibodies is influenced by several factors, including the antigen used in the vaccine, the age of the person being vaccinated, and the person's general health (for example, certain chronic health conditions may have an impact on immunity). Older people and others with weakened immune systems may not generate the same amount of antibodies after vaccination; further, their antibody levels may drop more quickly when compared to young, healthy people.

Getting vaccinated each year provides the best protection against flu throughout flu season. It's important to get a flu vaccine every season, even if you got vaccinated the season before and the viruses in the flu vaccine have not changed for the current season.

### LAIV

**11. What are the pros and cons of allowing LAIV4 without adequate vaccine effectiveness data as we strive to improve acceptance of flu vaccines?**

While observational data from 2010-11 through 2015-16 flu seasons indicate that LAIV was not effective among 2 through 17-year-olds against H1N1pdm09 influenza viruses in the U.S., LAIV was effective against influenza B viruses, and was similarly effective to inactivated influenza vaccines against H3N2 viruses. Some data suggest that the new H1N1 vaccine virus included in the new LAIV vaccines will have improved effectiveness against circulating H1N1 viruses; however, no published effectiveness estimates are available yet.

**12. Why can't children with asthma or wheezing receive LAIV?**

Some studies have shown an increased risk of asthma events/wheezing in children, particularly those less than 4 years of age, with a history of asthma/wheezing after receipt of LAIV. On the basis of these studies, ACIP recommends that LAIV should not be administered to children aged 2-4 years who have received a diagnosis of asthma or whose parents or caregivers report that a health care provider has told them during the preceding 12 months that their child had wheezing or asthma or whose medical record indicates a wheezing episode has occurred during the preceding 12 months. For persons  $\geq 5$  years, asthma is considered a precaution for use of LAIV.

### Vaccine Supply

**13. Can you tell us anything about why there is no quadrivalent high dose product?**

Influenza vaccine production and distribution in the US are primarily private sector endeavors therefore, the vaccine manufacturers are in the best position to address this question.

**14. Any idea when prefilled syringes will be released? My vendor says they are still in the inspection process?**

The timing of the completion of influenza vaccine production varies from year to year and depends upon on a number of factors. Since, influenza vaccine production and distribution in the US are primarily private sector endeavors, your vendor and/or the manufacturer will have the most up-to-date information about the timing of your order. Some information about influenza vaccine supply and distribution can be found on the CDC website at <https://www.cdc.gov/flu/about/qa/index.htm>

### Vaccine Administration

**15. Is there a greater benefit in using a jet injector vs other form?**

Flu vaccination with AFLURIA® and AFLURIA Quadrivalent® via jet injector is approved for use in people 18 through 64 years of age. Clinical trial data used in FDA's approval of the jet injector flu vaccine (i.e.,

the PharmaJet Stratis Needle-Free Injector used with AFLURIA<sup>®</sup>) demonstrated that vaccination using this jet injector method provided a non-inferior (i.e., similar) level of immune protection compared to the same flu vaccine administered via traditional flu shot. Additional information about flu vaccination by jet injector can be found on CDC's website at <https://www.cdc.gov/flu/protect/vaccine/jet-injector.htm>

**16. Is there a mechanism for patients to decline a VIS sheet?**

For those vaccines for which a VIS is required, providers are responsible for making sure a patient (or parent/legal representative of a minor) receiving the vaccine is given the VIS to read. The VIS may be a paper copy that the patient takes with them, a laminated copy that stays at the clinic, or it may be viewed on a computer or mobile device. The provider does not have to force the patient to read the VIS. Additionally, while it is not a requirement for providers to give the patient a paper copy to take with them, it is recommended that they do so because it contains information about what to do if an adverse event occurs. The patient can decline taking a paper copy with them when they leave the clinic. Additional information about VISs can be found on CDC's website at <https://www.cdc.gov/vaccines/hcp/vis/about/index.html>

**17. In healthcare facility, who do you vaccinate first? The healthcare employees or the patient?**

Influenza vaccination is particularly important for persons at increased risk for severe complications from influenza virus infection and for persons living with or caring for high risk individuals. We do not anticipate influenza vaccine shortages this season therefore prioritization should not be necessary and both employees and patients should be encouraged to receive influenza vaccine.

**18. For patients who will be 65 early in the flu season, can high dose vaccine be administered prior to their 65<sup>th</sup> birthday?**

High-dose influenza vaccine is licensed and recommended for persons ≥65 years of age. Use of the high-dose vaccine in a person less than 65 years of age is an off-label use of this product.

Communication (Kristin/Mattie)

**19. Has the CDC determined a theme for this flu season campaign?**

- This season, CDC is focusing on working with healthcare professionals to make sure they make a strong flu vaccine recommendation. You can see our new healthcare recommendation page at <https://www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm>.
- This doesn't mean we're not still updating and using our Fight Flu/superhero materials, which you can find at <https://www.cdc.gov/flu/resource-center/freeresources/index.htm>, but we want to make sure that people with chronic medical issues and those at high risk are getting the right message from their providers.

**20. How do I get access to the Medscape Expert Commentary?**

The online/text only Medscape commentary hasn't been posted yet, but when it is up it will be available at <https://www.cdc.gov/flu/resource-center/freeresources/video/media-medscape.htm>.

**21. Do we need to let you know our email to be added to get the flu campaign materials?**

You can always sign yourself up to get CDC flu emails at <https://www.cdc.gov/flu/resource-center/partners/join-partners-form.htm>. Archived flu emails are also available at <https://www.cdc.gov/flu/newsletter-archive.html>.