

Good afternoon. I'm Commander Ibad Khan, and I'm representing the Clinician Outreach and Communication Activity, COCA, with the Emergency Risk Communication Branch at the Centers for Disease Control and Prevention. I would like to welcome you to today's COCA call 2022 to 2023 Recommendations For Influenza Prevention and Treatment in Children, an Update For Pediatric Providers. All participants joining us today are in listen-only mode.

Free continuing education is offered for this webinar. Instructions on how to earn continuing education will be provided at the end of the call. In compliance with continuing education requirements, all planners and presenters must disclose all financial relationships in any amount with ineligible companies over the previous 24 months, as well as any use of unlabeled products or products under investigational use. CDC, our planners, and presenters wish to disclose they have no financial relationships with ineligible companies whose primary business is producing, marketing, selling, reselling, or distributing healthcare products used by or on patients, with the exception of Dr. Kristina Bryant, who's an investigator on clinical trials with Gilead, Enanta, and Pfizer. All of the relevant financial relationships listed for these individuals have been mitigated. Content will not include any discussion of the unlabeled use of a product or a product under investigational use, with the exception of Dr. Fatima Dawood's discussion of neuraminidase inhibitor medications that are FDA approved only for the treatment of uncomplicated influenza. But we'll discuss off-label use such as for hospitalized patients or for unapproved age groups such as young neonates. CDC did not accept financial or in-kind support from ineligible companies for this continuing education activity.

At the conclusion of the session, participants will be able to accomplish the following: Highlight key recommendations in the AAP influenza policy statement, Recommendations For Prevention and Control of Influenza in Children 2022 to 2023 and in the CDC Advisory Committee on Immunization Practices document, Prevention and Control of Seasonal Influenza Vaccines: Recommendations of the Advisory Committee on Immunization Practices United States 2022 to 2023 Influenza Season. Discuss the importance of influenza vaccination and treatment during the COVID-19 pandemic. Describe strategies to increase vaccination rates and highlight important health disparities. And review considerations for the coadministration of influenza vaccines and other immunizations including the COVID-19 vaccine.

After the presentations, there will be a Q&A session. You may submit questions at any time during today's presentation. To ask a question using Zoom, click the Q&A button at the bottom of your screen. Then type your question in the Q&A box. Please note that we often receive many more questions than we can answer during our webinars. If you're a patient, please refer your questions to your healthcare provider. If you're a member of the media, please contact CDC Media Relations at 404-639-3286. Or send an email to [media@cdc.gov](mailto:media@cdc.gov). We have introduced self knowledge checks throughout the presentation. We hope you enjoy these opportunities to assess your understanding of today's session. Please do not type your answers into the Q&A box, as this may disrupt the Q&A portion at the end of the session.

I would now like to welcome our presenters for today's COCA Call. We're pleased to have with us Dr. Fatima Dawood, a Medical Officer Epidemiologist in the National Center for Immunization and Respiratory Diseases at CDC. Our second presenter is Dr. Kristina Bryant.

Dr. Bryant is a member of AAP's Committee on Infectious Diseases and a Professor of Pediatrics at the University of Louisville School of Medicine. She's a Hospital Epidemiologist at Norton Children's Hospital. And she also serves as the Director For System Pediatric Epidemiology and Infectious Diseases at Norton Children's Medical Group in Louisville, Kentucky. It is now my pleasure to turn it over to Dr. Dawood.

Dr. Dawood, please proceed.

Thank you. Good afternoon, and thanks very much for the opportunity to speak with you today. For my portion of the presentation, I will cover recommendations for influenza prevention and treatment in children from the CDC perspective. Next slide.

The last couple of influenza seasons during the current COVID-19 pandemic has been atypical, as I will show you in a few slides from now. But like to start by reminding you of why influenza prevention and children's remains critically important. We know from many flu seasons before the COVID-19 pandemic that millions of children in the US get sick with seasonal flu during typical seasons. In addition, based on estimates from statistical models, there were 7000 to 26,000 flu-related hospitalizations per season in just children aged less than 5 years during the nine seasons from the 2010-2011 season through the 2019-2020 season. In addition, 37 to 199 flu-related deaths have been reported per season in children less than 18 years of age during the most recent 5 pre-COVID pandemic influenza seasons. If there's one thing I hope you'll take away from today's call and share with the children and families that you take care of is that flu vaccination remains the best way to prevent flu in children. There are studies that show that getting vaccinated reduces flu illnesses, doctor's visits, flu-related hospitalizations, and even death in children. The link at the bottom of this slide provides more details about these studies, as well as key facts that you can share with children and their families about seasonal flu vaccination this season. Next slide.

And now let's move to briefly reviewing what we saw with influenza activity during this past season, which was the 2021-2022 influenza season. Last season, almost all flu viruses detected in the United States were A(H3N2) viruses. The season was both a long season and one that went later than most flu seasons. It was unusual in a couple of other ways as well. First, there were two wave of circulation, as I'll show you in the next couple of slides. And, second, flu activity began to increase somewhat early in November and then remained elevated and in some cases even increased in some areas in May and early June. In fact, activity levels were higher in May and June than ever before. Despite this prolonged season, flu activity with low overall and was the lowest ever compared to pre-pandemic seasons by most metrics, although there was more flu than during the 2020-2021 season, which was the first flu season during the COVID pandemic. Next slide.

So the next few slides we'll see an illustration of the patterns that I just described. This slide shows data from US clinical laboratories on the left and US public health laboratories on the right. Both types of laboratories receive respiratory samples that are tested for flu viruses, and the graph here show the results of testing. The primary y-axis on both graphs is the number of positive samples, that is, samples testing positive for flu viruses at the lab; and the x-axes show epidemiologic weeks. Both graphs illustrate the two waves of detection of influenza that I

previously described. And, on the right, the public health laboratory data also -- which includes subtyping results also illustrates the strong predominance of A(H3N2) viruses as denoted by the red bars. On the left, the clinical laboratory data doesn't include subtyping results but shows a predominance of influenza A viruses as denoted by the yellow. Next slide.

So this slide again shows us the US clinical laboratory surveillance data but now puts the 2021-2022 influenza season in the context of the preceding six seasons. So on this graph, the y axis shows the percent of clinical specimens that were positive for influenza viruses. And this most recent season, the 2021-22 season is the light blue line with the darker blue diamonds that you can see towards the bottom of the various colored lines. And you can see that the percent positive tracks lower than all the pre-pandemic seasons but higher than the first season during the pandemic, which was the 2020-21 season depicted by the red line at the very bottom of the graph almost flush with the zero mark on the x axis. Next slide.

Now, this slide shows data on laboratory confirmed influenza associated deaths in children, which has been a reportable event to CDC since 2004. The graph here shows reported deaths by season for the most recent four seasons. Up to this point, there have been 34 reported laboratory confirmed deaths in children during the 2021-2022 season. Next slide.

I'll wrap up this section on influenza surveillance with what we know about influenza globally during the past season. Because many of the countries in the southern hemisphere have their winter influenza seasons during our northern hemisphere summer or roughly June through August, scientists and epidemiologists sometimes look to the southern hemisphere to get a sense of what we might expect during the upcoming flu season. So this slide shows us data from the World Health Organization's global influenza surveillance and response system. Influenza positive samples submitted from Southern Hemisphere countries during the 5 most recent influenza seasons are shown on the bottom. If we look all the way to the right side, we can see the Southern Hemisphere at 2022 influenza season, which shows a clear picture of much more influenza detection than the previous season in 2021. Next slide.

So now let's look at some data from the southern hemisphere at the country level. This slide shows us data from Argentina, Chile, and Australia. In general, the timing of influenza activity in 2022 was unusual in many Southern Hemisphere countries, with some countries seeing an earlier start to the season and relatively higher flu circulation compared to many of the pre-COVID pandemic season. As an example, if we look at the bottom right graph from Australia, the red line is their most recent flu season that just ended; and the dotted lines are their pre-pandemic seasons. So we can see that their influenza season started early in April and has had a higher peak in the number of laboratory confirmed cases reported through their surveillance. It's very hard to know whether the patterns observed in the Southern Hemisphere are any indication of what we're going to see this year. But the observations from the recent flu seasons in the Southern Hemisphere highlight why it remains really important that we are prepared and help children and their families protect themselves from flu with vaccination. Next slide.

To end this section on flu surveillance, this slide includes some additional resources of surveillance data that you can refer to as we head into this upcoming flu season. The FluView website is a particularly good resource to check periodically for updates.

Typically, beginning in October, we start to have more detailed reports available there. And the FluView website also has a feature called FluView Interactive, which is an application where you can actually pull down data and look at it by different seasons or different age groups and look at it by HHS Region or by state. Next slide. So for the next few slides, I'm going to shift to current CDC recommendations for influenza antiviral treatment. Next slide.

So, as in previous seasons, this season, CDC recommends antiviral treatment as early as possible for any patient with confirmed or suspected influenza who falls into three categories: those who are hospitalized, those who have severe complicated or progressive illness, and those at high risk for influenza complications. Antiviral treatment may also be considered for any previously healthy symptomatic person in the outpatient setting who has confirmed or suspected influenza if treatment can be initiated within 48 hours of illness onset. Next slide.

So this slide summarizes persons who are at higher risk for influenza complications for the purposes of antiviral treatment recommendations. And so this includes children aged less than 2 years of age, adults age 65 years and over, pregnant and postpartum persons, children receiving long-term aspirin therapy, American Indians and Alaska Natives, people with certain underlying medical conditions, and residents of nursing homes and chronic care facilities. Next slide.

There are four FDA approved antivirals that are recommended for use in the United States currently, three of these are neuraminidase inhibitors, and those include oral oseltamivir, inhaled zanamivir, and intravenous peramivir. And the fourth antiviral is a cap dependent endonuclease inhibitor, oral baloxavir. So the table on this slide summarizes the differences in the route of administration and the age indications for each antiviral when used for treatment. With respect to the age indications, I want to highlight the FDA-approved age indications for peramivir and baloxavir were both very recently expanded. Peramivir is now approved for treatment of acute uncomplicated influenza in people 6 months of age and older. This is a change from the previous age indication that went down just 2 years of age. Baloxavir is now approved for treatment of acute uncomplicated influenza in people 5 years of age and older who are otherwise healthy or in people 12 years of age and older who are at high risk of developing flu complications. This is a change from the previous age indication that went down to 12 years regardless of underlying health status. Also, though this is not new but I think it's worth a reminder, for oseltamivir, the FDA-approved age indication includes children age 14 days and older. But CDC, AAP, and the Infectious Diseases Society of America recommend oseltamivir for treatment of any age down to and including young infants less than 14 days old. So just know that there is an antiviral treatment option that is an oral option available for our youngest patients. Next page.

So let's pause here for our first self-knowledge check. Which of the following influenza antiviral medications is licensed for treatment of uncomplicated influenza for infants 14 days of age and older? That A, zanamivir; B, peramivir; C, oseltamivir; D, baloxavir; or, E, both peramivir and oseltamivir.

Okay. And I think we can move to the next slide.

The correct answer here is C. Oral oseltamivir phosphate is approved by the FDA for treatment of acute, uncomplicated influenza within two days of illness onset in people 14 days and older.

But, again, note that, although it's not part of the FDA-approved indications, use of oral oseltamivir for treatment of influenza in infants less than 14 days old is recommended by the CDC and the American Academy of Pediatrics. Next slide.

And I'm going to shift to the last section of my presentation which will focus on the recommendations of the Advisory Committee on Immunization Practices for Influenza Vaccines for this upcoming season, the 2022-23 season. Next slide.

Routine annual influenza vaccination is still recommended for all persons 6 months of age and older who do not have a contraindication to vaccination. Although vaccination is recommended for everyone, there are certain groups for whom vaccination is especially important. These include people aged 6 months and older who are at increased risk of flu complications and severe illness. And we'll review who falls into that category in a moment. It also includes contacts and caregivers of persons less than 5 years of age or 50 years of age and older and contacts and caregivers of persons with medical conditions that put them at higher risk for severe complication. Next slide.

So here are the groups considered at increased risk for influenza complications and severe illness for the purpose of -- purposes of influenza vaccination recommendations. These groups include children 6 to 59 months of age. Note here that children less than 6 months of age are also at higher risk for severe influenza, but they're not included here because they can't receive vaccine. Adults 50 years of age and older, people who are immunocompromised, people who are or will be pregnant during the influenza season, Children and adolescents receiving aspirin- or salicylate-containing medications, residents of nursing homes or other long-term care facilities, American Indians and Alaska Natives, and persons with extreme obesity. Next slide.

The 2022-23 ACIP influenza statement includes three updates that are relevant to pediatric vaccination as outlined here. These include an update to the flu vaccine composition for the upcoming season; a labeling change to Flucelvax Quadrivalent, which actually took place midway into last season but is highlighted for awareness in this year's recommendation; and an update to the vaccine expected to be available for children during the upcoming season. And we'll go through these updates in more detail in the next few slides. Next slide.

Because circulating influenza strains are constantly changing, the World Health Organization and the FDA reevaluate the composition of flu vaccines annually in February and March of each year, and they use global influenza surveillance data to prepare for the upcoming flu season. Now that we have an egg-based and not -- we have both egg-based and non-egg-based vaccines, there are recommended strain compositions for each of the two types of vaccines. What's important to know here is that the strain selected for the egg-based and non-egg-based vaccines are antigenically similar and differ mainly in the way they are growing for vaccine production. But for this upcoming season, there were changes in the vaccine composition compared to last season for the A(H3N2) and B Victoria strains in the vaccine. Next slide.

The second update is the expansion in the age indication for Flucelvax quadrivalent, which is a cell culture-based influenza vaccine. This expansion took place in two steps in March of 2021.

FDA-approved the use of Flucelvax for children down to the age of 2 years, which meant a new expansion specifically to children ages 2 through less than 4 years. And then, in October of 2021, the FDA-approved further expansion of the age indication to include children down to 6 months of age and older. The Flucelvax is now available for use in children 6 months and older, and this new approval is based on data from a randomized immunogenicity and safety study among approximately 2400 children aged 6 to 47 months of age, about a third of whom were 6 to 23 months of age. Next slide.

This slide summarizes available vaccines for Children 6 through 35 months of age and certain dosing considerations in this age group. There are now 5 inactivated flu vaccines licensed for children in this age group, with the addition of the new Flucelvax quadrivalent expanded age indication. And, as you can see, there are some differences in the recommended dose of vaccine for the various vaccines, so it's important to ensure that the correct dose is given. The first three vaccines listed here all have a recommended dose of 0.5 ml. In contrast, Afluria quadrivalent has a recommended dose of 0.25 mls, and Fluzone quadrivalent can be given to this age group as either 0.25 mls or 0.5 ml dose. Another thing to note for this upcoming season is that both Afluria quadrivalent and Fluzone quadrivalent, 0.25 ml prefilled syringes will not be available. So for children in this age group, those 6 to 35 months of age, the 0.25 ml dose must be obtained from a multi-dose vial. Next slide.

So I'd now like to touch on a few important things to know when administering influenza vaccine this season when SARS-CoV-2, the virus that causes COVID-19, may circulate and with the availability of COVID-19 vaccines for children. First, it's important to counsel children and their families about possible self-limited side effects after flu vaccination so they'll know what to expect. These side effects again are usually self-limited. They normally resolved within 72 hours after vaccination, and they can include redness, pain, or swelling at the injection site; fever, chills, headache, or body aches. Because of concerns for COVID-19, the current guidance is that vaccine recipients who develop a fever after vaccination should stay home until fever free for 24 hours without use of a fever-reducing medication. Next slide.

Many families may ask about whether their children can receive influenza and COVID-19 vaccines at the same time. If this question arises, there are a few things to know. First, it's important to know that the routine administration of all age-appropriate doses of vaccines simultaneously is recommended when no specific contraindication exists. This is emphasized to avoid missed opportunities for vaccination when children are in the office or another vaccination setting and are able to be vaccinated. Second, COVID-19 vaccines may be administered regardless of the time of influenza vaccination, and that includes administration on the same day. If giving the vaccines on the same day, it is recommended that they be administered in different injection sites. In here, injection site is defined as an area at least -- or different injection sites is defined as an area at least one inch apart. Next slide.

So, to wrap up, let's turn to the upcoming season. It's unclear what the impact of the ongoing pandemic will be on the upcoming flu season in the United States. It's possible that flu viruses and SARS-CoV-2 could co-circulate. It's also possible that some people may be coinfecting with both flu and SARS-CoV-2. It's a possibility that we may also see more influenza than during the past two seasons because of reduced population immunity to flu from low circulation over the

past couple of years and because of changes in measures to reduce COVID-19. For that reason, it's important to do what we can to take preventive measures. Annual flu vaccination is the best tool we have to prevent influenza, and it's particularly important to help children and their families get vaccinated this upcoming season. Next slide.

And I'll end my presentation with this slide showing some additional resources both for healthcare professionals as well as for children and their families. Thanks very much, and I'll turn the next section of the presentation over to Dr. Bryant.

Good afternoon, everyone. Dr. Dawood has shared information about the most recent influenza season, highlighting that the flu continues to be unpredictable. She's also reminded us that all influenza -- that influenza causes a substantial burden of disease in children. Next slide, please.

My job today is to share the American Academy of Pediatrics recommendations for influenza immunization and treatment during the 2022-23 season. In particular, I want to review strategies to increase immunization rates, and I also want to highlight important health disparities. Next slide, please.

Last week, the AAP released a new policy statement and technical report for the 2022-2023 influenza season. The policy statement is a succinct summary of the recommendations, while the Technical Report provides the "why" behind the recommendations. In case you haven't had a chance to look at these yet, there is some important new information for the upcoming season. Next slide, please.

Dr. Dawood has already told you that the vaccine composition has been updated, and the age indication for Flucelvax has been lowered to the 6 months. As you heard, the FDA made this change last fall. But it was too late to make it into our published policy statement, so we're highlighting it this year. The age indication for peramivir for treatment of influenza has been lowered to 6 months. And news hot off the presses is that the age indication for baloxavir has been lowered to 5 years. In the AAP statement, we include the recommended doses for treatment and prophylaxis. And we also discuss when you might want to use baloxavir. While we highlight health disparities as they relate to influenza, we have eliminated race-based recommendations in accordance with the AAP Words Matter guidance. And, finally, we focus on evidence-based strategies to increase influenza immunization rates. Next slide.

Now, of course, there are many things that haven't changed for this season. Influenza continues to cause morbidity and mortality in children. Annual influenza vaccination is recommended for all persons 6 months and older, and any vaccine appropriate for age and health status can be used. Influenza vaccine can be administered at the same time as other vaccines, including the COVID-19 vaccine. And antiviral treatment continues to be recommended for certain children with influenza. Dr. Dawood has already made this point, but I really want to emphasize it because you'll see that this seems to be an area of opportunity for physician to care for children. Next slide.

This table appears in the AAP Technical Report and is a snapshot of three recent influenza seasons and their impact on children. During a typical influenza season, thousands of children

are hospitalized with flu. Hospitalization rates are highest in kids under 5. Many kids who are hospitalized have no underlying health condition. Dr. Dawood reminded us that, in a typical influenza season, kids die from flu. And if we just look at the 2019-2020 season, I'll remind you that 57% of those who died had no underlying medical condition; and 74% of those who died were vaccine eligible but unvaccinated. Next slide.

The morbidity experienced by children admitted to the hospital with flu is significant. In one cross-sectional study that included data from 14 US influenza hospitalization surveillance network sites, more than 13,000 children were hospitalized. And, of these, 20% were admitted to the intensive care unit, 70% had pneumonia, and 5% required mechanical ventilation. Next slide.

While we tend to focus on the pulmonary complications of flu, two papers published within the last year or so, highlight that 8 to 10% of children hospitalized with flu experienced neurologic complications. These include but are not limited to both febrile and non-febrile seizures and encephalopathy. Neurologic complications are more common in kids with underlying neurologic conditions but can occur in any child. Next slide.

And, again, each year, kids die from influenza. In the US influenza hospitalization surveillance network study, 1/2% of kids admitted to the hospital died. Next slide.

Now let's talk about health disparities. I want to call your attention to this paper published by O'Halloran and colleagues. It was another cross-sectional study that included ten influenza seasons. Higher rates of severe influenza disease were reported in Black, Hispanic, American Indian, Alaskan native, and Asian Pacific Islander people compared with White people. And differences were pronounced in children 4 years of age and younger. In this age group, hospitalization rates were higher in Black, Hispanic, American Indian, Alaskan native, and Asian Pacific Islander children compared with White children. And the rate of in-hospital death was three- to fourfold higher in Black, Hispanic, and Asian Pacific Islander children compared with White children. The reason for these disparities, the reason or reasons must be investigated and addressed. Next -- next slide.

Although we have safe and effective vaccines, and those vaccines can protect children from severe flu complications, including hospitalization and death, we are under-utilizing influenza vaccine. Influenza immunization rates fell again last year, as you see on this slide. Influenza vaccination coverage in children was only 55%. And, again, there were important health disparities. Next slide. As of April 9, 2022, influenza vaccine coverage was 8.

1 percentage points lower for non-Hispanic Black children compared with non-Hispanic White children. Next slide.

You've already heard from Dr. Dawood that the influenza virus strains for the current season have been updated. Next slide.

And the influenza vaccines available for children during the upcoming season are listed on this slide. The AAP recommends that any vaccine appropriate for age and health status can be used. Next slide.

Our influenza policy statement emphasizes practical tips for vaccine administration. So, for example, when two doses are required in a given season, the use of the same brand or type is not required. What does this look like in practice? A healthy 3-year-old who's never received a flu vaccine needs two doses of vaccine. One dose could be an inactivated vaccine, and the second dose could be LAIV. The maximum number of doses drawn from a multi-dose vial is specified in the package insert and should not be exceeded. This varies by product, so be sure and read the package insert. Residual product in the vial must be discarded, regardless of the remaining volume in the vial. And a 0.5 ml unit dose of any inactivated influenza vaccine cannot be split into two separate 0.25 ml doses. Next slide.

As you've already heard, IIV may be administered simultaneously with or at any time before or after other inactivated or live vaccines. This includes COVID-19 vaccines, which as you know are inactivated vaccines. LAIV may be administered simultaneously with other live or inactivated vaccines but, if not administered simultaneously, at least four weeks should pass between the administration of LAIV and non oral live vaccines. Next slide.

Each year, there are questions about allergies, particularly egg allergies. The AAP language is a little bit different than the ACIP language around this, so I want to mention it here. Children with egg allergies can receive any licensed recommended vaccine that is age appropriate, with no special precautions other than those recommended for routine vaccines. Egg allergy does not increase the risk of anaphylactic reaction to vaccination with inactivated influenza vaccines. Any child who's had a severe allergic reaction after influenza vaccination should be evaluated by an allergist to help identify the vaccine component responsible for the reaction and determine -- to determine whether future vaccine receipt is appropriate. Now, allergy to gelatin is very rare. But, if you encounter a child who has an allergy to gelatin, that child should not receive LAIV. They should receive IIV or recombinant influenza vaccine if age appropriate, instead of LAIV. Recall that the recombinant vaccine is only indicated for individuals 18 and above. But some of you may be practicing in a family medicine office or a med peds office, and you may stock recombinant vaccine. Next slide.

The number of influenza vaccine doses recommended for children remains unchanged this season, and it depends on the child's age at first dose administration and the child's influenza vaccination history. Children 6 months through 8 years of age who are receiving influenza vaccine for the first time or who received only one dose of influenza vaccine prior to July 1, 2022, or whose vaccination status is unknown should receive two doses of influenza vaccine this season, administered at least eight weeks or -- I'm sorry, administered at least four weeks apart. All other children should receive one dose this season. Next slide.

With regard to timing, the AAP recommends offering influenza vaccine to children as soon as it becomes available, even if this is in July or August. And this is especially important for children who require two doses.

If you've not already started immunizing children, now is the time. Administer recommended doses ideally by the end of October, but continue offering vaccine to unvaccinated children and families throughout the season. Next slide.

Efforts should be made to promote influenza vaccination of all children, especially those at high risk for complications. On this slide is an abbreviated version of the table that appears in the AAP policy statement. The policy statement does give examples of each of these high-risk medical conditions and offers a working definition for obesity in children. Next slide.

Influenza immunization rates in children fell last year, and there's still a lot of work to be done to explore why this happened. But we really need an all-hands-on-deck approach this year to increase influenza immunization rates in children. Practical evidence-based strategies that can be implemented in the primary care office at the provider or care team level are listed on this slide. You may already do some of these in your practice. Offer a strong presumptive recommendation to all eligible patients, and bundle that with recommendations for other needed vaccines. Use consistent messaging across care team members. That messaging can start when the patient makes an appointment or checks in at the front desk. Identifying an influenza champion or champions within the practice can also be beneficial. Next slide.

The next two slides cover interventions that can be implemented at the practice or health system level. I won't read all of this to you. But I will call out vaccinating at all visit types and in all healthcare settings. This includes emergency department visits and vaccinating upon hospital discharge for eligible patients. We need to eliminate barriers to access to influenza vaccine, and this could include expanded office hours or a vaccine only clinic. Next slide.

Additionally, standing orders and clinical decision support in the electronic medical record can help ensure that vaccine opportunities are not missed, even in the busiest practice on the busiest day. Next slide.

Interventions are also needed at the community level. While the AAP has long championed immunization within the medical home, especially for the youngest children, in order to make sure that every eligible child receives flu vaccine, we do need to partner with community stakeholders to support vaccine initiatives in the community. And this includes school-based immunization programs and immunization at pharmacies. If we are to eliminate health disparities, we need to engage directly with affected communities to develop tailored strategies that promote trust, encourage dialogue, and increase access to preventative services. Next slide.

The AAP's recommendations for treatment of influenza have not changed this year. Offer treatment as early as possible, regardless of influenza vaccination status and duration of symptoms for any child who's hospitalized with confirmed or suspected flu disease; any child with severe, complicated, or progressive influenza disease, regardless of healthcare setting; and any child with suspected or confirmed influenza disease of any severity if they are at high risk for influenza complications. Next slide.

Clinicians should consider treatment in the outpatient setting for any child with confirmed or suspected influenza disease who is not at risk for complications if treatment can be initiated within 48 hours of illness onset. Additionally, consider treatment for any child with confirmed or suspected influenza whose siblings or household contacts are either younger than 6 months or have a high-risk condition that puts them at increased risk for influenza complications. For

children who meet these criteria, there is a role for shared decision-making with parents. Next slide.

Available antivirals are summarized in the AAP policy statement and on this slide. Next slide.

In my opening remarks, I mentioned that we have an opportunity with antiviral treatment. In a study of more than 22 hospitalized children with acute respiratory illness during the 2015-2016 influenza season, only 51% were tested for influenza.

Only 52% of those who tested positive, and 6% of those with a negative or unknown test were treated with antivirals. These data suggest that multifactorial interventions are urgently needed to increase adherence to antiviral treatment guidelines for children hospitalized with influenza. Next slide. The AAP has a number of resources to assist providers in communicating with patients and families about influenza vaccine and implementing vaccination programs. Next slide.

Both the AAP and CDC have influenza toolkits. Next slide.

And some of the resources in the AAP toolkit are depicted on this slide. I'll call your attention to [healthychildren.org](http://healthychildren.org).

There are articles specifically for parents and families. Next slide.

Now for a knowledge check. If a child requires two doses of influenza vaccine in a given season, the doses must be the same brand. Is that true or false? Next slide.

The answer is false. The same brand of influenza vaccine is not needed for a child requiring two doses. More than one product may be appropriate for a given patient, and the AAP has no preference for one product over another. The important thing to know is that influenza vaccination should not be delayed to obtain a specific product. Thank you so much for the opportunity to speak with you today.

Presenters, thank you for providing this timely information to our audience. We will now go into our Q&A session. Please remember to ask a question using Zoom. Click the Q&A button at the bottom of your screen and type your question. And please note that we often receive more questions that we can answer during our webinars.

So for our first question is, Depending on what you shared about the previous influenza season, are you -- are we expecting a more severe or a higher rate of influenza season due to the changes in both the pandemic mitigation as well as the decrease in vaccination rates that you shared?

This is Fatima Dawood. I can start, and Dr. Bryant may want to add. You know, I think both Dr. Bryant and I highlighted the unpredictability of influenza.

Very hard to know what this upcoming season will bring. The last couple of seasons have been very atypical as we showed earlier with some of the surveillance data. But it is true that there is

the possibility for more flu with this upcoming season with the relaxation of COVID-19 mitigation measures. And certainly the Southern Hemisphere countries that have their flu season during our summer, some of them have seen quite a bit more flu than in the previous two seasons. So, again, very important for us to be prepared with our best tool, which is vaccination.

This is Kris Bryant. I completely agree. And I think we need to emphasize with families that flu is unpredictable. I think some families may have forgotten how bad flu can be. And so I think we should approach this topic with families and just remind them that flu causes significant morbidity and even mortality in children during a typical flu season.

Thank you very much for those answers. And along the same lines, another question we received in the Q&A box that perhaps warrants a bit discussion is -- and I think, Dr. Bryant, you were already heading this way with your previous answer. Do you have any recommendations that either CDC or AAP have developed or brainstormed on getting parents on board to get their children vaccinated against influenza this year?

This is Kris Bryant. I think that the slide of resources from the AAP has a number of tools that providers can use to talk to families about flu, encourage immunization. And if there is hesitancy, begin to address that.

Thank you, Dr. Bryant. And for our audience, these slides are available on COCA's web page at [emergency.cdc.gov/coca](https://emergency.cdc.gov/coca).

Again, that address is [emergency.cdc.gov/coca](https://emergency.cdc.gov/coca). That information will be shared at the conclusion of this webinar again, as well, if you did not capture that. Okay.

Our next question asks -- and this question can really be applied to both the influenza vaccination as well as influenza antivirals, if you would like. The question asks, Do you have any specific recommendations about timing or duration when using vaccination for somebody who is recovering from COVID?

Dr. Bryant, would you like me to take that one?

Sure. That would be great.

So there are a couple of considerations for vaccination of persons with COVID-19 or those who are in quarantine after an exposure to someone with COVID-19. First, people who are in isolation for COVID-19 or again in quarantine because of they've been exposed shouldn't be vaccinated if vaccination poses a risk in the vaccination setting. In other words, ideally, someone should not be coming into the clinic while they're known to have COVID-19 specifically to get vaccinated. In addition, there are some considerations around severity of illness for those with COVID-19. So if someone is in a vaccination setting already for another reason and they're known to have COVID-19, if they have moderately severe -- moderate or severe illness, it's recommended that vaccination should be deferred until they've recovered.

For people who are mildly ill or asymptomatic, one can consider deferring vaccination largely to avoid confusing COVID-19 illness symptoms in the post-vaccination setting. For example, if someone gets a vaccine and develops a fever, not knowing whether that's a progression of illness or known side effect of the vaccine.

Thank you very much for that, Dr. Dawood. A similar question about timing of vaccination asks, Regarding the MMRV, MMR, and varicella vaccinations, the inquirer wants to know, is it okay to give influenza vaccine -- and they're under the consideration that you're supposed to avoid other vaccines within four weeks of the aforementioned vaccines.

So this is Kris Bryant. Just to clarify, influenza vaccine can be administered on the same day as any other vaccine, including MMR and varicella. The consideration comes when you are giving LAIV, which is a live attenuated vaccine. You can give LAIV on the same day as other live vaccines, including MMR and varicella. But if those vaccines are not administered on the same day, at least four weeks should pass between the administration of LAIV and other non-oral live vaccines.

Dr. Dawood, do you want to add anything to that or provide additional clarification?

No. Nothing additional to add. Thanks.

Thank you, Dr. Bryant. Our next question asks, Are there any updates that you may be aware of in the development of mRNA based influenza vaccines?

This is -- oh, go ahead. Go ahead.

No, please, Dr. Dawood.

I was just going to say that mRNA vaccines for influenza are in early stages of development, but the ACIP has not specifically addressed them. Certainly, as any updates become available, they'll be made available on the CDC website as things would get closer to availability to the general public. But, at this time, ACIP has not addressed mRNA vaccines for influenza. Thank you very much. And we have time for one last question.

And the question asks, Should antiviral therapy be started only after a positive influenza test?

Dr. Dawood, do you want me to start with that, and then you can provide additional information?

Sure.

So the AAP recommends -- the AAP recommendations call out confirmed or suspected influenza disease. I think with the availability of rapid influenza test, certainly we have the -- the -- lots of capacity to know. But no test is perfect. And so, for example, let's say that you have a family where multiple people have tested positive for influenza and you have a child who's not brought in for testing for some reason or who's symptomatic and really seems to have influenza but they

have a negative test, you know that child is likely to have influenza. And so, in that setting, that child would fall under the category of suspected influenza and could be treated.

Dr. Dawood, do you agree?

I agree, and maybe I'll just add, as Dr. Bryant was describing, it's so important to take into consideration the clinical information you have, as in the example that Dr. Bryant just shared, and also to be aware of your local influenza surveillance data. If there is influenza known to be circulating in your area and someone presents with influenza-like symptoms, it could very well be influenza. And it's really important to remember that the clinical benefit from antivirals is highest when they're given early.

So if you suspect influenza based on a patient's symptoms and local flu surveillance data, consider empiric treatment. And, in particular, don't delay treatment or wait for test results for those who are hospitalized, have severe illness, or are at high risk for flu complications.

Thank you very much. I want to thank everyone for joining us today with a special thanks to our presenters, Dr. Fatima Dawood and Dr. Kristina Bryant. Next slide, please.

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We invite you to join us this coming Tuesday, September 20, at 2pm Eastern for our next COCA Call. The topic will be evaluating and supporting patients presenting with cardiovascular symptoms following COVID.

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Again, thank you for joining us for today's COCA Call. And have a great day.