Good afternoon. I'm Captain Ibad Khan and I'm I am representing the Clinician Outreach and Communication Activity, COCA, with the Emergency Risk Communication Branch of the Centers for Disease Control and Prevention. I would like to welcome you to today's COCA Call, 2023 to 2024 Recommendation 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 and instructions on how to earn continuing education will be provided at the end of the COCA 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 product or products under investigational use. CDC, our planners, and presenters wish to disclose they have no financial relationship with ineligible companies whose primary business is, marketing, selling, re-selling, or distributing healthcare products used by or on patients with the exception of Dr. Kristina Bryant who would like to disclose that she is an investigator of multicenter vaccine trials with Pfizer and Enanta, and receives royalties from Oxford University Press. All of the relevant financial relationships listed for this individual have been mitigated. Content will not include any discussion of the unlabeled use of a product or a product under investigational use, except Dr. Fatimah Dawood who would like to disclose that she will discuss neuraminidase inhibitor medications that are FDA- approved only for treating uncomplicated influenza. CDC did not accept financial or in-kind support from ineligible companies for this continuing education activity.

At the conclusion of today's 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, 2023–2024" and in the CDC Advisory Committee on Immunization Practices' document, “Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023-2024 Influenza Season", review strategies to increase influenza vaccination rates and highlight current health disparities in vaccination coverage, and describe considerations and best practices for coadministering influenza vaccines and other childhood immunizations.

After the presentation there will be a Q&A session. You may submit questions at any time during today's presentations. To ask a question using Zoom, click the Q&A button at the bottom of your screen and then type your question in the Q&A box. Please note that we receive many more questions than we can answer during our webinars.

If you are a patient, please refer your questions to your healthcare provider. If you are a member of the media, please contact CDC media relations at 404-639-3286 or send an email to media@cdc.gov.

I would now like to welcome our presenters for today's COCA call. We are pleased to have with us Dr. Fatimah Dawood. Dr. Dawood is a Medical Officer and 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 she's 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, please proceed.

Good afternoon, for my portion of the presentation, I will cover recommendations for influenza prevention and treatment in children from the CDC perspective. Next slide please.

I would like to start by reminding us of why influenza prevention in children remains critically important. Based on data now for many influenza seasons, it is estimated that millions of children in the U. S. get sick with seasonal flu during typical seasons. And based on estimates from statistical models, 7,000 to 26,000 related hospitalizations occurred per season in just children aged less than five years during the nine seasons before the COVID-19 pandemic. 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 five pre-COVID pandemic influenza seasons. If there's one thing you take away from today's call to share with children and families that you take care of, I hope it is that flu vaccination remains the best way to prevent flu in children. There are studies that show that getting vaccinated reduces flu illnesses, but also importantly reduces flu related doctors' visits, hospitalizations and even deaths in children.

The link at the bottom of the slide, and the slides will be distributed, provides more details about these studies as well as key facts that you can share with children and their families about seasonal flu vaccination. Next please.

Let's now move to briefly reviewing what we saw with influenza activity during this past season 2022 - 2023 influenza season. Last season influenza A/H3N2 viruses predominated but there was also some A/H1N1 circulation and the season was notable for several reasons.

First, there was an early start to influenza circulation that began in early to mid-October in most parts of the country and we saw a single epidemic wave of activity that largely subsided by early January. Second, there were reports of high influenza associated pediatric hospitalization rates in some areas of the country. And finally, influenza viruses co-circulated with other respiratory viruses including SARS-CoV-2, respiratory syncytial virus and rhino and entero viruses particularly among children, resulting in increase in many health care systems and prompting CDC to put out a health alert notification for people who care for children. Next slide.

The next few slides summarize CDC's surveillance data that illustrates patterns that I just described. So this slide shows us data from US clinical laboratories on the left and US public health laboratories on the right. Both of these types of laboratories receive respiratory samples that are tested for influenza viruses and on the graphs we can see on the primary Y-axis the number of positive samples tested at the labs and the X-axis show us epidemiologic. Both of the graphs illustrate the early single wave of detection of influenza that I previously described and on the right at public health labs where subtyping results are available, we can also see the strong predominance of influenza AH3N2 viruses as shown by the red bars with additional detection of influenza AH1N1 viruses as shown by the orange bars. On the left, the clinical laboratory data doesn't include subtyping results but again shows us a predominance of influenza A viruses with very little influenza B detection. Now moving to the bottom of the slide, this table at the bottom

summarizes the percent of samples positive for influenza viruses at the two types of labs during the three time periods. The time period before the pandemic, during the early pandemic and during this past season. What we can take away from the table is that the percent positivity in the past season largely returned to pre-pandemic levels. Next slide.

This slide shows data from CDC's FluView surveillance system which conducts population-based surveillance for laboratory confirmed influenza associated hospitalizations and uses this data to calculate hospitalization rates by age each season. So here we see hospitalization rates among children ages zero to four years.

This past season it was shown to us with the red line and the preceding 10 seasons are shown with the other colored lines. The Y-axis shows us rates per 100,000 population and the X- axis is again epidemiologic weeks. So here we can clearly see the elevated peak in hospitalization rates among young children during this past season compared to the 10 prior seasons. Next slide.

Each year, CDC estimates the burden of influenza in the U.S. using a disease burden pyramid model where the base is illnesses and as we move up the pyramid we go to increasing levels of severity including hospitalizations and deaths. Mathematical models are used to generate these estimates based on data from CDC influenza surveillance systems and from surveys. On the left-hand side, we see ranges of estimates for the seasons from 2010 through 2020 and on the right we can see preliminary estimates for this most recent influenza season and we can see that the estimates of all levels of the disease burden pyramid for this last season fall squarely in the middle of the range of estimates for the 10 seasons before the COVID pandemic suggesting that this past season was a moderate influenza season. Next slide.

This slide shows data on laboratory confirmed influenza associated deaths in children which has been reportable events to CDC now for almost 20 years starting in 2004. The graphs here show reported deaths by season for the most recent seasons and illustrates that the number of reported deaths during this past season was similar to the most recent pre-pandemic season of the 2019-2020 season. Last year, 168 influenza deaths in children were reported to CDC. Next slide.

So to wrap up this section of influenza surveillance data, this slide shows data from the World Health Organization's global influenza surveillance and response system. Because many of the countries in the southern hemisphere have their winter influenza season during our northern hemisphere summer, roughly May through August, scientists and epidemiologists often look to the southern hemisphere to get a sense of what might occur during our upcoming flu season. So here we can see data from three southern hemisphere countries, South Africa, Australia and Chile. Influenza positive samples submitted from these countries are shown for the two most recent seasons. If you look to the right of each of the graphs, you can see the most recent season and we can see in all of the countries depicted here, influenza A(H3) viruses predominated but in Australia, there was substantial influenza B detection as well. Next slide.

Now, I want to shift from the surveillance data that we were reviewing to talk about what we know about influenza vaccine effectiveness in children this past season. In most seasons, CDC estimates influenza vaccine effectiveness using observational data from various study platforms. This slide summarizes preliminary estimates of vaccine effectiveness against influenza-

associated emergency department visits and hospitalizations and children age six months to seven years of age. The data here are courtesy of the new vaccine surveillance network a CDC collaboration with seven U. S. medical centers. What the network found is that influenza vaccine was 49% effective at preventing flu- related hospitalizations in children and 68% effective at preventing flu-related emergency department visits last season. Next slide.

As you have conversations with children and their families about the value of influenza vaccination, consider sharing with them the value of vaccines not only to prevent illness but also to prevent more severe illness including medical visits and hospitalizations. Survey data indicates that data such as those I just showed you from the new vaccine surveillance network can be compelling for families who are undecided about whether to get flu vaccines for their children. Next slide.

To end this section, this slide includes some additional sources of surveillance data that are a good resource to get more details about the information I shared with you about past season and are also a good resource as we head into the upcoming flu season. In particular, I want to highlight the FluView website which is a good place to look for periodic updates as we move into the upcoming season. Starting in October, there are more detailed reports available and there is also an interactive feature. It's called FluView Interactive where you can actually pull down data and look at it by different seasons, age groups and geographic locations. Next slide.

In this next section I'm going to shift to current CDC recommendations for influenza antiviral treatment. Next slide.

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 one of three groups. Those who are hospitalized, those who have severe, complicated or progressive illness and those at high risk for influenza complications.

Antiviral treatments may also be considered for any previously healthy symptomatic person in the outpatient setting that is confirmed or suspected influenza if treatment can be initiated within 48 hours of illness onset. It is important to note that clinical benefit from influenza antivirals is greatest when antiviral treatment is given early. Next slide.

This slide summarizes groups of people who are at high risk for complications where antiviral treatment is recommended. In interest of time, I'm not going to read through all of the groups but I do want to highlight that children aged less than two years are considered a high risk group and children and people in general with underlying medical conditions are another high risk group recommended to antiviral treatment. Next slide.

There are four FDA-approved antivirals that are recommended for use in the United States. These fall into two classes of medications. The first class are neuraminidase inhibitors and these include Oseltamivir, inhaled Zanamivir and intravenous Peramivir. And the second class of medications are the cap-dependent endonuclease inhibitor of which there is one licensed product in the United States, oral Baloxavir. The table on the slide summarizes the differences in the route of administration and the age indications for each antiviral. You can find additional similar

information for prophylaxis on CDC's webpages. A couple things I want to note about route of administration. The age indications are that Oseltamivir and Baloxavir are the two oral medications available.

Zanamivir is administered through the diskhaler device and Peramivir is an intravenous medication. And with respect to age, Peramivir is approved for treatment of acute uncomplicated influenza in people six months of age and older so it's available for older infants and up. Baloxavir is now approved for treatment of acute uncomplicated influenza in people five years of age and older who are otherwise healthy or in people 12 years of age or older who are at high risk of developing influenza complications. And lastly, I do want to highlight that for Oseltamivir, the FDA- approved age indication includes children aged 14 days and older. But CDC, AAP and IDSA recommend Oseltamivir for treatment of any age down to and including the youngest infants less than 14 days of age. Next slide.

So now I will shift to the last section of my presentation and this section will focus on the recommendations of the Advisory Committee on Immunization Practices for influenza vaccines for this upcoming season, 2023-2024 season. And these guidelines were just published online last week. Next slide.

So first thing to know is that routine annual influenza vaccination is recommended for all persons six months of age and older who do not have a contraindication to vaccination. Although vaccinations are recommended for everyone, there are certain groups for whom vaccinations is especially important and these include people aged six months and older who are at increased risk of influenza complications and severe illness. It also includes contacts and caregivers of people are less than five years of age and people 50 years of age and older and of people with medical conditions that put them at high risk for severe complications. Next slide.

This slide summarizes groups considered at increased risk for influenza complication and severe illness. I will walk us through the list here. First, children six to 59 months of age. I do want to note here that children less than six months of age are also at high risk, but they're not able to receive vaccines. Adults 65 years of age and older. It is this older age group that is considered at increased risk for severe influenza, but note that adults 50 years or older are a priority group if vaccine supplies are limited.

Additional higher risk groups prioritized for vaccination are people who are immunocompromised, people who are or will be pregnant during the influenza season, children and adolescents who receive aspirin or salicylate containing medications because they are at risk for Reye syndrome after they develop influenza virus infection. Residents of nursing homes and other long-term care facilities, people who identify as American Indians or Alaska Natives, and persons with extreme obesity. Next slide.

The upcoming ACIP recommendations for the upcoming season, the 2023 - 2024 season, include two updates relevant to the pediatric population. These include an update to the influenza vaccine composition for this upcoming season and an update related to administration of influenza vaccines to people with egg allergy.

We will talk about each of these in more details in the next couple of slides. Next slide.

Circulating influenza viruses are constantly changing and for that reason the World Health Organization and the U. S. Food and Drug Administration re-evaluate the composition of flu vaccines annually in February and March of each year. They do so based on global influenza surveillance data and make predictions about what may circulate during the upcoming season. They are both egg-based and not egg-based vaccines now available. And so there are recommended strain compositions for each of the two types of vaccines. What's important to note is that the strains selected for each of the two types of vaccines are antigenically similar. The main difference is largely in the way that they can be grown from vaccine production. So the update for this upcoming season is a change in the A(H1N1) strain in the vaccine. The other three strands in the vaccine remain the same as during last season. Next slide.

Now we will talk about the updates related to influenza vaccine administration to people with egg-allergy. For the upcoming season, ACIP has made the following updates. Most influenza vaccines are produced with an egg-based manufacturing process and they do contain a small amount of egg and in previous seasons, it was recommended that additional safety measures be used for administering egg-based influenza vaccines to people who had a history of severe allergic reactions to egg. The update for this season is that people with egg-allergy may now receive any influenza vaccine, egg-based or non-egg based that is otherwise appropriate for their age and health status. Additional safety measures are no longer recommended. It is important to note here though that all vaccines should be given in settings where allergic reactions can be recognized and treated quickly. Next slide.

This next slide summarizes information that it is not an update to the ACIP recommendations but it is important for vaccine providers for children to know about. It summarizes available vaccines for children six months through 35 months of age and the dosing considerations for this age group. There are five and activated vaccines licensed for children in this age group and we can see here that there are some differences in the recommended dose of vaccines for the various vaccines. The first three vaccines listed all have a recommended dose of 0. 5 mL's. In contrast, Afluria Quadrivalent has a recommended dose of 0. 25 mL's. Fluzone Quadrivalent can be given to this age at either 0. 25mL or 0. 5 mL dose. It's important to be aware of these differences and ensure that an appropriate dose is given. An additional thing to know about the upcoming season is that Afluria Quadivalent and Fluzone Quadrivalent, 0. 25 syringes are no longer available. So for Afluria Quadrivalent 0. 25 mL dose can be obtained from a multidose file. For Fluzone Quadrivalent, the options are to either give the 0. 5 mL dose or for the 0. 25 mL dose to be taken from multidose or single dose vial. Next slide.

Now let's talk about coadministration of vaccines. Many families, especially during this upcoming season may ask about whether their children can receive influenza vaccines ,COVID-19 vaccines and now the new RSV monoclonal antibody nirsevimab at the same time. If this questions arises, there are a couple things to know. First, it is important to know that routine administration of all age-appropriate doses of vaccines simultaneously is recommended according to immunization best practices. This is emphasized to avoid missing opportunities for vaccination when children are in the office or in other vaccination setting and are able to be vaccinated. Second,COVID-19 vaccines and nirsevimab may be administered regardless of the

timing of influenza vaccination and that includes on the same day. If giving the product on the same day, it is recommended that they be administered in different sites which is defined as sites that are at least 1 inch apart. Next slide.

So, we will pause here for a knowledge check. Is the statement shown here true or false? A child with a history of severe allergic reaction to eggs should not receive an annual influenza vaccine according to ACIP guidelines. Okay, let's go to the next slide.

The correct answer is B, false. The Advisory Committee on Immunization Practices recommends that all people six months and older with egg- allergy receive an annual influenza vaccine in the absence of contraindications to vaccination. And in addition, as we learned for the 2023-2024 ACIP influenza vaccination recommendations, there was an update to state that people with egg-allergy may receive any influenza vaccine egg-based or non egg-based that is otherwise appropriate for their age and health status without the need for additional safety measures beyond those recommended for receipt of any vaccine. Next slide. I would like to close here by reminding us of a few things as we head into the upcoming flu season.

First and foremost, influenza remains unpredictable. Last season reminded us that influenza viruses can circulate early, they can result in high rates of medically attended illnesses in children and they can co-circulate with other respiratory viruses placing increased strain on healthcare systems. Fortunately we have an effective tool for influenza prevention that is influenza vaccination. So that is why influenza vaccination remains critically important in the upcoming season. Next slide.

On this last slide, we have some additional resources, both for healthcare professionals as well as for children and their families. Again, these slides will be posted on the web and can be accessed there after the call. I will turn things over now to Dr. Kristina Bryant.

Thank you Dr. Dawood. Good afternoon everyone. Next slide please.

Over the next 20 minutes or so, I am going to discuss the American Academy of Pediatrics recommendations for influenza immunization and treatment during the upcoming influenza season. Spoiler alert, they aligned very closely with the CDC recommendations. AAP guidance and my presentation today emphasize strategies to increase influenza immunization rates and we know we have opportunities with flu. I'm also going to highlight that we have ongoing health disparities with influenza vaccination. Next please.

The AAP policy statement and technical report were released earlier this week on August 29th. The policy statement is a relatively succinct summary of recommendations and the technical report contains the data that supports the recommendations. Next please.

Now there are a few things that are new for the 2023-2024 season. Dr. Dawood has already mentioned that the vaccine composition has been updated. This year's recommendations from the AAP have more information than we've had in the past about immunization of immunocompromised hosts, I will share those with you today. We've also added information

about improving access to influenza vaccine. We highlight indications for influenza testing and we call out the availability of at-home testing for flu. Next.

Of course, there are many things that haven't changed. Influenza as you've just heard continues to cause morbidity and mortality in children. Annual influenza vaccination continues to be recommended for all persons six months and older. 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 it can also be administered to children who are receiving nirsevimab the new long-acting monoclonal antibody indicated for the prevention of RSV.

Antiviral treatment continues to be recommended for certain children with influenza. And as we'll discuss in a bit, recent data suggest that we are not actually treating all of the children with flu who could benefit from treatment. Next slide.

In a typical season, about 9% of children develop symptomatic influenza infection. Flu causes significant morbidity as summarized here. In children who are hospitalized with flu , 20% require treatment in an intensive care unit. 17% developed pneumonia. And this might be a primary viral pneumonia or a secondary bacterial pneumonia, perhaps with staph aureus or group A strep. 5% of children hospitalized with flu require mechanical ventilation. Up to 10% experience neurologic complications and this includes both febrile and non-febrile seizures. Every year, children in the U. S. die from influenza. And in children who are hospitalized but survived, post-discharge sequelae occur. This is particularly true in children hospitalized with critical influenza. In one study, 78% of children hospitalized with critical influenza and pre-existing asthma, experienced asthma symptoms in the 90 days following discharge and 13% required readmission. Among patients without pre-existing asthma, 11% had asthma newly diagnosed. Next.

Any child can develop complicated influenza but some groups of children are disproportionately affected by severe adverse outcomes of hospitalization and death. Influenza associated hospitalization rates are higher in Black, Hispanic, American Indian, Alaskan Native, Asian and Pacific Islander children. And when Black, Hispanic, Indian Native and Asian Pacific Islander are children hospitalized with flu, rates of in-hospital death is three-fold higher when compared with white children. We need to better understand and address the social determinants of health that contribute to these disparities. Next.

Now, you've already heard that we have safe and effective vaccines that can protect children against the severe outcomes of influenza but these vaccines are being underutilized. Influenza vaccination coverage decreased again last season. Through April 15th of 2023, only 1% of all children six months to 17 years of age had received flu vaccines and disparities continue to exist. Next.

Flu vaccination coverage levels remain lower last season in non-Hispanic Black children compared to non-Hispanic white children Hispanic children who identified as non-Hispanic other. Geographic disparities also exist. Vaccination coverage among children residing in rural areas was just over 41% substantially lower than in children residing in suburban or urban areas. Next slide.

Now, the next two slides contain influenza vaccination administration pearls. Went two doses of vaccine are required in a given season, it is not necessary to use the same brand or even the same type of vaccine. The maximum number of doses that can be withdrawn from multidose vial is specified in each vaccine's package insert and should not be exceeded. Any residual volume that remains after withdrawing the maximum number of doses must be discarded. As Dr. Dawood has explained, the dose volume recommended for children six months to 35 months varies by vaccine. A 0. 5 mL unit dose of any inactivated vaccine should never be split into two separate 0. 25 mL doses. As you have heard, influenza vaccines can be administered on the same day as other live and inactivated vaccines and can be administered on the same day as nirsevimab. Next slide.

Immunocompromised children are at risk of complicated influenza and will benefit from inactivated influenza vaccine. But the timing of the vaccine is important to optimize effectiveness. In children with malignant neoplasms, influenza vaccine is ideally administered two weeks before chemotherapy. If you children receiving anti-B cell therapies, vaccine should be referred until B cell recovery. Children who have undergone stem cell transplant can generally receive flu vaccine beginning 4 to 6 months after transplant depending on the level of immunosuppression. After a solid organ transplant, vaccination can begin three months after transplant, but during flu season, vaccine can be considered for some patients beginning one month after transplant. Next slide.

The number of influenza vaccine doses recommended for children remains unchanged this influenza season and depends on the child's age at first-dose administration and influenza vaccination history. Our algorithm has a new look though, so I will walk you through this. Children six months through eight years of age who are receiving flu vaccine for the first time or who received only one dose prior to July 1st 2023, or whose vaccination status is simply unknown, need two doses of flu vaccine at least four weeks apart. All other children should receive one dose the season. Now, for children who are eight years of age who require two doses of flu vaccine this season, both doses should be administered, even if the child turns nine between dose one and dose two. Give vaccine to children as soon as it becomes available, especially for children who require two doses. For some of you in the audience, that means now. You have influenza vaccines on your shelf. Some of you are still waiting for doses, but these should arrive soon. Remember, flu vaccine arrived early last year and we started the season with more than half of eligible children unprotected. So, now is the time to begin to vaccinate. Ideally, children will receive all recommended doses by the end of October, but Vaccination should continue throughout the season. Next slide please.

All eligible children six months and older should be immunized with flu vaccine, but some special efforts are needed to make sure that children at higher risk for adverse outcomes from influenza receive influenza vaccine. You've already heard this message, but I think it is important enough to repeat. Children at higher risk for influenza complications include children younger than five years of age, particularly those younger than two. Children residing in chronic care facilities as well as children with certain medical conditions. And those conditions are outlined here. Additionally, this year, the AAP is highlighting that children born early-term or late-preterm are at higher risk. So now, let's talk about how we might improve influenza immunization rates. Let's go to the next slide.

We need to get from less than 60% to more than 70% or higher, that is the Healthy People 2030 target. So how do we do that? Individual providers, practices, health systems and public health partners can take specific actions to improve influenza vaccine coverage. A strong presented recommendation from a trusted clinician is associated with vaccine acceptance. Bundling the recommendation for flu vaccine with other routinely recommended vaccines can also be effective. For example, today your child is due for vaccines to protect him against measles, mumps, rubella, chickenpox and flu. Practices should educate all team members about flu vaccine, including the front office staff and messaging about the importance of flu vaccine can begin at check-in. Next slide.

Individual practices and health systems can take steps to reduce missed opportunities for immunization. This includes reviewing influenza immunization status at offices during the season and vaccinating at all visit types. A child with a mild eye or ear infection can still get a flu vaccine. Now for some families, getting to the office during regular office hours can be a barrier. And so, some practices may have the capacity to offer expanded hours, specifically for flu vaccine or they may be able to host evening or weekend flu vaccine clinics. Some hospitals, very successfully, offer flu vaccine upon discharge from the emergency department or inpatient units during flu season. Next.

We can leverage technology to increase immunization rates. Sending reminder recall messages is an evidence-based strategy to improve childhood influenza immunization rates. Reminders can be delivered by phone, email, text message or electronic patient portals. Standing vaccine orders and vaccine prompts in the electronic health record are also effective. Systems may utilize the electronic health record to identify patients at risk and provide targeted communication to those patients. The AAP's technical report includes sample value sets that could be used to identify patients at risk and create decisions support tools for clinicians.

I think it is human nature for all of us to overestimate progress toward a goal when we don't have data. That is where audit and feedback is so valuable and can drive our efforts to immunize more patients. Next slide please. Immunization in the medical home is ideal, especially for the youngest child. But, immunization of all children six months and older between now and the start of the flu season is a big task.

If we want to reach all children, we need to partner with community stakeholders, including early childhood learning centers, schools and pharmacies to increase access. We also need to engage with communities affected by health disparities to promote the trust and understand barriers to vaccine access. That way we can eliminate these barriers. We also need to make sure that we are getting the message right. Especially when we are communicating in languages other than English. Next slide.

Precise language matters. The term "la gripe" is often used in Spanish language educational materials about the flu. "La gripe" is actually an imprecise term that can be used to describe a variety of viral respiratory illnesses not just influenza. This can lead to confusion about the actual illness prevented by influenza vaccine and may actually result in decreased vaccine confidence about vaccine effectiveness. Next slide.

So the term influenza is preferred over "la gripe" when communicating with Spanish-speaking patients and families. We are updating our educational materials. Finally, we need to acknowledge -- next slide please that structural barriers exist to achieving our influenza immunization coverage goals. We need to work together to eliminate disparities in influenza vaccine supply between privately insured patients and those eligible through the vaccines for children program. Next slide.

We also need to work with public and private payers to ensure adequate reimbursement for administering flu vaccines to pediatric patients. Payment systems must be updated so that doses administered in July and August are reimbursed. out-of-pocket costs can be a barrier for some families and must be eliminated. Next slide please.

Now let's switch gears and talk a little bit about testing. Not every child with influenza -like illness needs of flu test. Tests when results are needed to inform clinical management or infection prevention measures or to distinguish influenza from other respiratory illnesses with similar symptoms, including SARS-CoV-2. When flu is circulating test hospitalized children with symptoms of flu with the molecular assay. PCR tests are highly sensitive and specific and can be used to promptly identify children who need antiviral treatment. For the first time, at home test for flu are available for children as young as two years of age. In February, the Food and Drug Administration issued emergency use authorization for an over-the-counter at-home test to diagnose influenza A, Influenza B and SARS-CoV-2 in symptomatic patients. Now is really the time to think about anticipatory guidance for our patients about if and when these tests might be useful. Practices also need to think about how they're going to manage calls from parents reporting positive at-home tests in children. Next slide please.

Dr. Dawood reviewed indications for antiviral treatment for influenza. I will just include this reminder that antiviral treatment remains underutilized in many healthcare facilities. In a multicenter retrospective cross-sectional study conducted between 2007 and 2020 at 36 U. S. children's hospitals, use of Oseltamivirin in hospitalized children with flu increased over time but never exceeded 80%. There was significant variability between hospitals and the odds of receiving Oseltamivir was lower in children younger than five years of age and we note that younger children are at increased risk of complicated flu. Over the next two slides, I've listed some useful resources from the AAP. Next slide please.

We have resources for healthcare professionals as well as families. Next slide please.

Again, these resources will be available in the slides posted online and let's end with the knowledge check. Next slide please.

Influenza vaccination should only occur in the medical home. True or false? Next slide.

This is false. Although vaccination in the medical home is optimal, administering influenza vaccine in diverse locations, including subspecialty practices, urgent care clinics, emergency department, schools and pharmacies, may increase uptake among patients who cannot access their medical home or don't have a medical home as well as those at higher risk for influenza-related complications. When influenza vaccination takes place in a non-traditional setting,

appropriate documentation should be provided to patients and to the medical home. Settings that offer influenza of vaccination should submit details about the vaccination to the appropriate immunization information system or vaccine registry. Thank you.

Presenters, thank you so much for providing this timely information to our audience. We will now go into our Q&A session. And for our audience please remember to ask a question using Zoom, click the Q&A button at the bottom of your screen and type your question. Please note that we often receive many more questions than we can answer during our webinars. For our presenters, we have a few questions from our audience asking about some tips and some best practices for patient counseling.

Our first question asks, what are some clear and actionable health education tips you can share when counseling either parents, guardians or caregivers regarding concerns they may have that the flu shot will give their child influenza.

This is Dr. Kristina Bryant. I think this is a practical question, it comes up. Parents say, you know, I or my child had a flu vaccine in the past and then we developed influenza shortly thereafter. Well, what we know is that the flu shot is an inactivated shot.

It can't give you the flu. When people develop shortly after receiving a flu vaccine, it is because they have not had a chance to develop antibodies. The shot just has not had a chance to work yet. The shot cannot give you the flu. Live attenuated intranasal vaccine can cause some stuffy nose.

If you're giving that vaccine, we just need to share that information with families. I do think that when people say I'm reluctant to get vaccines, to prevent influenza in my child, it is a best practice to say, tell me more. Tell me about your concerns. That way I can answer your questions and address those.

Thank you very much. Our next question is another counseling question. The question asks you mentioned about getting the flu vaccine for your children as soon as possible, essentially if it is available right now. The question asks, what is any recommendation or perhaps any guidance you can share with providers if the parents ask about the immunity waning if the vaccine is administered this early in the late summer/fall season.

I can begin to answer that question. The ACIP guidance related to timing of vaccination takes into consideration several things. First, the unpredictability of influenza virus circulation. Second, opportunities for vaccination and vaccine delivery and practical considerations around that. Third, the emerging data about waning immunity after vaccination.

Taking all of those things into consideration, for most people, the best time to get that vaccination is September and October with the goal the end of October prior to when we see the virus circulating. There are special considerations for children in particular though, for children who require only a single-dose of vaccine in seasons where vaccines are available in July and August, those children can be considered for vaccination. The rationale for that is that many children come in for well child visits in July and August or other routine visits. Those are opportunities that should not be missed to ensure that children are protected before the upcoming

season. The other group of children for whom there is a special mention in the ACIP recommendations our children six months through eight years of age who are required two doses of vaccine to be considered fully vaccinated.

Dr. Bryant talked about who those children are. For those children again in seasons when vaccine is available as early as July or August. They are recommended to get their vaccine as early as possible and the rationale there is to provide sufficient time to come in and get the second dose which has to be given four weeks after the first dose with the goal of having them being fully vaccinated again before the end of October and before we tend to see flu viruses or circulating.

Thank you very much for that. Our next question asks, can you share any talking point we can use during counseling when discussing the change in recommendations regarding the egg-allergy?

This is Dr. Fatimah Dawood, I can answer that and Dr. Bryant may want to add to what I say. I think there's a couple of things to know, first ACIP updated those recommendations based on an extensive review of the literature, including 20 or so studies looking at seasonal influenza vaccination given to people with egg-allergy and outcomes after vaccination as well as studies from the 2009 pandemic with the monovalent vaccine in egg-allergic people. Across those studies, there were no reports of anaphylactic allergic reactions.

And other non-anaphylactic allergic reactions were exceedingly rare, less than 1% in the literature. ACIP also reviewed data that's submitted to CDC's vaccine adverse events reporting system. This is very much an evidence-based update. I think another important thing to note is that in general, as Dr. Bryant pointed out, the CDC ACIP recommendations and AAP's recommendations have for many years been in alignment but AAP actually reached this recommendation earlier and since 2016 has had a recommendation that people with egg-allergy may receive a vaccine without additional precautions beyond those given after any vaccination.

Dr. Bryant do you want to add anything additional?

Thank you for pointing out that the AAP has recommended this for a number of years that individuals with egg-allergy can safely receive influenza vaccine without any additional precautions. I think it is terrific that AAP and ACIP are now very much aligned on this point. Hopefully, this will reduce confusion.

Thank you both. Our next question asks, should a child receive the influenza vaccine if they are sick with another respiratory disease?

This is Dr. Kristina Bryant , so a mild illness with or without fever is not a contraindication to influenza vaccine. In a child who has more severe illness, you might wish to defer. But, if a child comes in with an URI and they have a mild illness, it is okay to give them the flu vaccine.

Thank you very much and we have time for one last question. The question asks, are there any considerations or factors to take into account when coadministering seasonal or routine vaccines to children while administrating the influenza vaccine?

This is Dr. Fatimah Dawood. I can answer that question. There are not. Influenza vaccines may be coadministered with any of the other recommended vaccines for children.

They only consideration is that if multiple vaccines are being given, the recommendation is to try to give them in different injection sites. A different injection site is defined as at least 1 inch apart.

Thank you very much for that and with that I want to thank everyone for joining us today with a special thanks to our presenters. All continuing education for COCA Calls is issued online through CDC training and continuing education online system at tceols.cdc.gov. Those who participate in today's live COCA Call and wish to receive continuing education please complete the online evaluation and posttest before October 2nd, 2023 with the course code WC4520-083123.

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Today's COCA Call will be available to view on-demand a few hours after the live call at emergency.cdc.gov/coca. We invite you to join us Tuesday, September 19th at 2:00 P. M.

eastern, for our next COCA Call. The topic will be Preparing for the Upcoming Respiratory Disease Season: Recommendations for Influenza, COVID-19 and RSV Vaccines for Older Adults. You can visit emergency.cdc.gov/coca for more details about this COCA Call and other upcoming COCA Calls.

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