

**Influenza Preparedness in the Pediatric Population
Clinician Outreach and Communication Activity (COCA) Conference
Call Hosted by the Centers for Disease Control and Prevention**

Host: Loretta Jackson-Brown

Moderator: Dr. Georgina Peacock

Presenters Dr. David Schonfeld, Dr. Henry “Hank” Bernstein and Dr. Lisa Grohskopf

Date/Time: December 14, 2010; 2:00 p.m. EST

Coordinator: Welcome, and thank you for standing by. All participants are in a listen-only until the Question & Answer session of today's conference. I'd like to inform all parties that the call is being recorded. Any objections to disconnect.

I'd like to turn the call over to your host today, Ms. Loretta Jackson-Brown. You may begin.

Loretta Jackson-Brown: Thank you, Joyce. Good afternoon, I'm Loretta Jackson-Brown and I'm representing the Clinician Outreach and Communication Activity, COCA, with the Emergency Communication System at the Centers for Disease Control and Prevention.

I am delighted to welcome you to today's COCA conference call, Influenza Preparedness in the Pediatric Population. We are pleased to have three subject matter experts with us today to discuss current influenza activity and recommendations for prevention and treatment of influenza in children.

During today's call you will hear the presenters referring to slides in their PowerPoint presentation. The PowerPoint slide set is available from our

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COCA website at emergency.cdc.gov/coca. Click on Conference Call. The slide set can be found under the call in number and call pass code.

The objectives for today's call are that participants will be able to understand 2010-2011 influenza activity, describe risk factors for developing serious flu complications in children, state effective strategies for influenza prevention and treatment in children, and identify emergency preparedness response tactics for the pediatric population.

Following the presentation you will have an opportunity to ask our presenters questions. Dialing star 1 will put you into the queue for questions.

In compliance with continuing education requirements, all presenters must disclose any financial - excuse me, any financial or other relationships with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters, as well as any use of an unlabeled product or products under investigational use. CDC, our planners and our presenters wish to disclose they have no financial interest or other relationship with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters.

This presentation will not include the discussion of the unlabeled use of a product or products under investigational use with the exception of Oseltamivir which is FDA approved for use in age 1 year and older.

During the influenza pandemic, CDC distributed the drug to birth under an EUA, Emergency Use Authorization protocol. Although the EUA - excuse me, the EUA has expired CDC recommends Oseltamivir to birth.

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Our moderator today is Dr. Georgina Peacock. Dr. Peacock is a developmental-behavioral pediatrician and medical officer in the National Center on Birth Defects and Developmental Disabilities at Centers for Disease Control and Prevention.

At this time please welcome today's COCA call moderator, Dr. Peacock.

Dr. Georgina Peacock: Hi, thank you, Loretta. I just wanted to also welcome everybody to this pediatric influenza update. I worked on the Children's Health Team in the H1N1 pandemic emergency response last year and continue to work this year on influenza issues related to children, and also on a cooperative agreement with the American Academy of Pediatrics which is focused on education and outreach pertaining to influenza and preparedness.

So in the spirit of this partnership with the American Academy of Pediatrics, I'm pleased today to introduce our three speakers, two of whom are representing the American Academy of Pediatrics, and one who represents the Centers for Disease Control and Prevention.

I'd first like to - and I will introduce all three speakers now and then they will go into their presentations. I'd first like to introduce David Schonfeld. Dr. Schonfeld is a Developmental Behavioral Pediatrician and the Thelma and Jack Rubinstein Professor of Pediatrics, Director of the Division of Developmental Behavioral Pediatrics and Director of the National Center on School Crisis and Bereavement at the Cincinnati Children's Hospital Medical Center.

He's a member of the National Commission on Children and Disasters, the Disaster Mental Health Subcommittee of the National Biodefense Science

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Board Federal Advisory Committee and the American Academy of Pediatrics Disaster Preparedness Advisory Council.

Through his role in the DPAC at the American Academy of Pediatrics he assisted the CDC in preparing guidance to healthcare providers during the recent pandemic that incorporated current information on morbidity and mortality in children associated with Novel H1N1. And he will be sharing some information regarding influenza preparedness for us in just a moment.

Our second speaker will be Dr. Hank Bernstein. He's a Professor of Pediatrics at Dartmouth Medical School. He has extensive experience as a Primary Care Pediatrician in a variety of settings. He's also a member of the American Academy of Pediatrics Committee on Infectious Diseases whose responsibility it is to develop and revise guidelines for control of infectious disease in children. He also serves as the American Academy of Pediatrics liaison to the CDC Advisory Committee on Immunization Practices, Influenza Workgroup.

And finally, Dr. Lisa Grohskopf who is with the CDC. She completed her training at Yale University - her medical training at Yale University, an Infectious Diseases Fellowship at the University of Washington. She currently is a Medical Officer in the Influenza Division and serves as the CDC's lead to the ACIP.

So I'd like to welcome our three speakers and look forward to some great presentations. Thank you. And I'll turn it over to you, Dr. Schonfeld.

Dr. David Schonfeld: Okay, well, good afternoon. My presentation - the slides from my presentation will start on Slide Number 8 in your slide set and that's the title

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slide which explains that I'm going to be talking about the pediatrician's role in preparedness. So turn to the next slide which is the outline on Slide Number 9.

What I hope to cover in this presentation is to start first by talking about some of the potential roles that pediatric healthcare providers can take related to disaster. And I'm going to be addressing disasters in general, but more specifically as it relates to public health crises and pandemic influenza.

Within those roles, obviously one is providing direct medical care. Within that care these healthcare providers also are responsible for providing anticipatory guidance, and I'll talk some about what that would include.

And then I would like to turn to the importance of establishing partnerships in the community in order to provide pediatric expertise. The National Commission on Children and Disasters has spoken frequently about how children make up approximately a quarter of the population, and the needs of children should be incorporated into the basic plans for disaster preparedness.

It should not be part of an annex or an addendum only, but that it should be incorporated into the base plan. And pediatric healthcare providers can serve as experts and provide direct consultation as their expertise and time allows. But they can also advocate for including pediatric expertise in these roles even if they don't personally fill those roles themselves.

And then the last section that I hope to cover during this presentation is the importance of practice and personal family preparedness towards overall preparedness for pandemic influenza.

So the next slide on providing direct medical care, which is Slide Number 10, obviously providing direct medical care is something healthcare providers do all the time. And in a disaster or particularly in an infectious disease situation such as a pandemic, we're going to be asked to provide direct medical care, often under stressful or austere conditions, to our own patient populations.

And one of the important tasks in readying yourself to do that is to keep updated on the evolving public health status and relevant medical information. This conference call is one example for doing just that. But there are also other mechanisms and you'll be hearing about that throughout today's call.

With infectious diseases though it isn't unusual for more than one family member to become ill at the same time or shortly thereafter. And sick parents may opt to bring their sick children to your office before or instead of seeking care for themselves even if, in fact, their children are less ill than the parents themselves.

And it may not be feasible or desirable in a pandemic or other infectious disease outbreak to refer them back to their own doctor. So pediatric healthcare providers are going to need to be prepared to care for additional patients and families which may include adults, or they may be asked to deliver care at different sites such as if your practice isn't able to remain open, whether it's because a building is damaged in certain types of disasters or if in a pandemic too many of your staff become ill or have to be home caring for their ill family members. So you don't have the support to be able to open a practice or maintain your practice open during a pandemic and may need to relocate.

So you also have to need to think about how to provide direct medical care locally at other sites, but also regionally. And some individuals and professionals may choose to also volunteer to work at more distant sites.

And along those lines, you want to be sure that you are collaborating with the hospital, clinic and practice settings to plan for surge capacity. So for example, I know at my own hospital we opened a flu clinic during the pandemic and we had all of the providers who were on the faculty and the staff volunteer to take turns -- we were all required to do so -- so that we could cover the entire clinic process.

And you would want to think about whether you would have a flu clinic at a hospital or whether it would be at a medical clinic, or it might be an alternate site with shared rotations.

Another aspect of providing direct medical care is screening protocols for influenza-like illnesses. And so what you'll see here is a Web address for getting information for one set of screening protocols that's been posted on the American Academy of Pediatrics Disaster Website.

Let me turn to the next slide, which is Slide 11 which goes over providing anticipatory guidance. We want to make sure that we encourage and facilitate influenza vaccination. And universal vaccination is obviously what is recommended. But even with universal vaccination you need to have a mechanism in place for prioritizing if it becomes necessary as the public health situation changes.

So if, for example, there is a new strain that becomes - a new strain is causing increased illness and another vaccine becomes available, how would you

prioritize? Or if there was some disruption in the flow of vaccines, so there were insufficient quantity to go around for a time period.

So you also need to think about delivery mechanisms within your practice setting, individual practice setting, and within your region for accomplishing universal vaccination and also communications strategies so if you did need to do outreach to particular parts of your population, or those more at risk, you would have a mechanism for identifying them in a timely way, communicating to them, and getting them in for vaccination.

To assist with encouraging influenza vaccination at a universal level, providers need to become aware of media messages. And I put on this slide both planned and spontaneous. So we will be hearing some about planned media messages, the strategies that the government is using and public health is using to encourage universal vaccination.

But unfortunately media messages originate out in the public and spread sometimes very quickly, often more quickly than the virus that we're trying to deal with can spread.

So we have to be aware of the media messages and healthcare providers need to emerge and maintain their status as trusted and hopefully persuasive sources of accurate medical information.

Along those lines I also do want to just parenthetically say you want to also be available to provide advice to parents about limiting media exposure for children at the same time we're trying to get messages out about the need for universal vaccination and the importance of doing that.

I'm going to turn to the next slide, which is Slide Number 12 which underscores some of the issues around establishing partnerships in the community. Pediatric healthcare professionals need to identify themselves and their professional organizations as resources for health departments and emergency managers for pandemic flu and other disaster and crisis response planning.

There's a unique set of expertise that we each bring to the planning process and we need to volunteer that expertise early on during the planning phases. We want to become a trusted collaborator for community-based organizations such as schools and childcare, preschool, Head Start and other child congregate care facilities, whether that be Juvenile Justice, youth groups, camps, the range of other programs and areas where children are cared for in groups.

We don't want to assume that all of these groups have the necessary expertise to figure out an ideal plan of how to deal with a pandemic or other disaster. The reality is that many do lack this expertise and - but the reality is they often act, still in the absence of that expertise.

And if we don't provide some information to them and guidance, healthcare providers will likely be left dealing with something that they might have been able to prevent or at least minimize.

The other thing that I would underscore is that these relationships are quite important but they need to be established before the disaster or the crisis situation. It's very hard to form these relationships and very ineffective to form these relationships as a crisis is emerging, or in the aftermath of the disaster.

The next slide talks about some of the providing consultation that we can - that healthcare providers can -- conduct prior to when a disaster has occurred. One would be to consult the health departments, emergency managers, and others on plans and how to form those plans.

And along those lines we want to ensure the incorporation of medical home for both the delivery of immunizations and the provision of medical treatment. And part of what we've heard as feedback from healthcare providers in the community in response to some of the activities taken in the more recent pandemic was that some of the vaccine administration seems to have not been taking into account the importance and the vital role of the medical home, and that alternative strategies were used. And part of what we need to do is provide consultation on the importance of how to do that differently in the future.

Pediatric healthcare providers can also provide consultation to schools, childcare, Head Start, after school programs and other congregate care sites. They can assist with the development of plans and identify policies which should be considered and reconsidered.

So as one example, a perhaps minor example, of a policy to reconsider would be problems with perfect attendance rewards in schools. So there were even some news reports out within the past couple years of offering lifetime perfect attendance awards at schools to - and giving a graduating senior a car, for example, if they never missed a day of school.

Well, that obviously conflicts with some of the recommendations that are important during a pandemic to encourage children to stay home when they

are ill and - or when they may be communicable. And so we have to rethink some of those policies and procedures and that type of input is unlikely to come unless healthcare providers help point that out.

Primary Care providers are also familiar with some of the problems with such practices as requiring doctor's notes in order for absences to be excused or having school staff send children home with advice to go to see their doctor even when what they really need to do is to go home and rest.

And so there may be some benefit of providing in-service training to school health staff and helping them with some of these policies and procedures so that we don't further spread the pandemic because of policies that were not carefully considered.

We also want to encourage appropriate prevention efforts in these congregate care sites such as the importance of hand washing. We need to recognize that schools may be cutting budgets and not restocking bathrooms with soap and paper towels are regularly as needed. So this is actually a time where we need to redouble our efforts in remind people the importance of this.

We also want to develop guidelines and processes for decisions about school closure to try and minimize the likelihood that such decisions for closure will be decided by political reasons such as by elected officials in the absence of a clear plan on what they should do.

We also want to provide consultation during the response and that's covered on Slide Number 14. We want to assist with the development of optimal media messages and this requires that pediatric healthcare providers

understand more about what it is that should be communicated and how it should be communicated during a disaster.

In general, there are two main purposes for public health messages during a disaster and people need to know which one is their goal. One goal is reassurance. If there is, in fact, no risk then people should be appropriately reassured. The second goal would be a call to action. In this case there is a risk but there's something you can do to decrease or eliminate that risk and you need to make sure the focus of the message is on providing practical steps that individuals can take to minimize or eliminate their personal risk.

Simply warning people of dangers is not a goal of public health messages. Warning people of potential dangers of a pandemic, for example, but telling them that it will be catastrophic, there'll be catastrophic loss of life, and then saying that the potentially lifesaving vaccines won't be ready for a couple months doesn't make a lot of sense.

We don't need to craft media messages that tell people to get scared, especially during a crisis. They tend to do that on their own and it's far less expensive. So the goal is to figure out how to craft those messages and make sure that you're accomplishing what you need.

The goal also is not to just help them understand about influenza or whatever the health crisis is, but rather, to focus on behaviorally relevant information, and overall we want to avoid fear-based messaging because that usually just generates fear and people don't act as logically when they are terrified. So instead we have to give them a call to action and information they can use to accomplish that.

The next slide talks about providing supportive services during response and recovery. We need to provide supportive services for families and communities under stress within our practice settings and pediatricians and other pediatric healthcare providers would benefit from receiving more professional development in these areas, so they can become even more effective in that role.

They also need to identify the need for, and facilitate, referral for patients. If a pandemic becomes very serious we also will not be able to rely on traditional mental health providers alone to provide mental health services to all grieving, depressed and anxious children and their families.

So we need to develop and promote mechanisms for providing services to children in schools and other congregate care sites and community sites and assist there with training professional development and advocate for service capacity in that role.

The next slide, which is Slide 16, talks about the importance of practice preparedness. And you should make sure that your office has a disaster preparedness plan in place. And I will refer you to the Disaster Preparedness For Pediatric Practices, an online tool. The Website is located on the slide, which talks about steps - practical steps that practices should take.

You also need to think of a continuity of operations plan coupled with appropriate policies regarding worker illness. So you want to have policies that discourage staff, including the physicians, from coming to work when they are ill or possibly contagious, and you also want to adopt universal influenza vaccination and may wish to consider offering vaccinations to all

employees at the worksite as well as to their children and spouses, such as through a loved one's vaccine clinic.

The last slide talks about the importance of personal and family preparedness. And you need to make sure that your family has a family disaster plan and ensure the same for your staff. They also need to have alternate plans for childcare and elder care and options if school closes or primary caretakers become ill.

Because if you and your staff are comfortable that those they care about are safe and cared for they'll be more capable of focusing on delivering care to patients.

The final point I wanted to make is to appreciate the impact providing care during a crisis has on healthcare providers. We will have our own family members impacted, and our friends, and there is extra burden in providing extra healthcare in the middle of a disaster. And being around people who are upset, demanding, self-centered, which people will often be during a crisis, or distressed isn't necessarily fun or particularly satisfying, although helping people in need and minimizing their distress effectively can be very rewarding professionally, and personally gratifying.

So we need to recognize the cost this has on us personally and professionally and make sure we attend to those needs. And I'll just end on Slide 18 by reminding you of the American Academy of Pediatrics Children and Disasters Website at aap.org/disaster. Thank you.

Dr. Georgina Peacock: Dr. Bernstein?

Dr. Hank Bernstein: Yes, thank you. We are now on Slide 19, and I wanted to remind the audience that the Committee on Infectious Diseases of the American Academy of Pediatrics, and the Advisory Committee on Immunization Practices of the CDC, and the American Academy of Family Practice work closely together in order to harmonize immunization recommendations and management of infectious diseases.

On Slide 20, we see that the influenza disease burden in the United States in an average year is immense. There are millions upon millions of infections and illnesses, millions of physician visits, hundreds of thousands of hospitalizations and many, many deaths, as you can see, ranging from several thousand on up to close to 50,000 in a given year (these statistics about deaths are from the last 30 years).

On Slide 21, we can look to see the rate of laboratory-confirmed influenza-associated hospitalizations per 10,000 by age group. And what one can see, particularly in the red, which is the 2009-2010 season, that many children and young adults were involved and susceptible to H1N1 and required hospitalization.

On Slide 22, this is a study from the *New England Journal of Medicine* early on with the onset of 2009 H1N1. And the purpose of this slide is to show on the left-hand side the many underlying medical conditions that put children and adults at risk for problems from influenza, particularly 2009 H1N1.

But also to mention that in the red box, in the very first line where it says any one condition, if 60% of them had an underlying medical condition, this means 40% of them were perfectly healthy without an underlying medical condition. So, we're dealing with an illness that affects not just children with

special healthcare needs or underlying health conditions, but also healthy children.

On Slide 23 this depicts how people felt like last year when there were two vaccines -- the usual trivalent seasonal vaccine as well as the introduction of the 2009 H1N1 monovalent vaccine. People were quite confused about how many doses people needed and it really caused lots of consternation.

There were also many people that were concerned about how safe the new monovalent vaccine was. So, some people were accepting of the seasonal vaccine, but were less accepting of the H1N1 monovalent.

On Slide 24, these are the trivalent flu vaccine strains for this season here in the Northern Hemisphere. Again, there are always three strains, two A strains and one B strain. This year, two of the three strains actually have changed. The first strain, the first H1N1, is now the 2009 H1N1, which is replacing the virus that has circulated in the Northern Hemisphere since 1977. There is also a new H3N2 strain that has been included in the trivalent vaccine, and the B strain is the same as it was in last year's seasonal flu vaccine.

This has prompted the annual influenza recommendations for both prevention and control of the disease in children that the American Academy of Pediatrics puts out every year. , and this was released in *Pediatrics* in October.

And, next slide, Slide 26, some of the key points that are important to remember that the 2009 influenza A H1N1 pandemic virus is expected to circulate, and there are many infants and children that are susceptible to this virus, and we know that there were 3 to 4 times as many deaths associated

with the - this pandemic virus last year, and we expect that there may be problems again this year if children are not properly immunized.

We also recognize that vaccine is indicated for everyone 6 months of age and older. There is a universal recommendation. So, special outreach should be made to children who are particularly susceptible to influenza as well as household contacts, especially those of young children and children with special healthcare needs or underlying health conditions. Pregnant women, particularly, should be getting the influenza vaccine, not only to protect themselves, but of course, to protect their newborn, and, of course, healthcare personnel, and we'll talk about that in a moment.

We also should remember that everyone should get influenza vaccine each year and that vaccine can be received not just in the fall, between October and December, but actually can be received any time through influenza season. So if you have not received it then in January, February, March or April, it's perfectly appropriate to still get the vaccine at that point because it can provide protection in your community.

The next slide, which is Slide 27, is an algorithm that's been created both - there's one in the MMWR from the CDC and one from the American Academy of Pediatrics. This highlights, again, that children under 6 months of age do not get influenza vaccine; children 9 years of age and older need only one dose, but then the algorithm is important for children 6 months of age through 8 years.

And if you look at Slide 28, you can see that the algorithm simplifies the decision making about how many doses, 6 months through 8 years of age children need. The first question relates to whether or not they received the

monovalent H1N1 vaccine last year; then whether they received seasonal flu vaccine last year. If they did receive seasonal flu vaccine, was last year the first time to receive it? And, the number of doses that they received.

Remember that children under 9, so 6 months through 8 years, need two doses of seasonal flu vaccine the first time they receive vaccine because they need to prime their immune systems in order to develop the appropriate amount of protection.

We then look at Slide 29 and also emphasize special outreach, again, to children with chronic health conditions, but also children under 5 years of age. Those that are under 24 months of age have a similar risk of being hospitalized with influenza-associated illnesses as other high risk groups, including senior citizens 65 years of age and older.

And, children 24 to 59 months of age have an increased rate of office visits and antimicrobial use. And, remember many of these children are the great transmitters, and they are the ones that are sharing the virus with their siblings, families and communities.

In Slide 30, this is again to emphasize the cocoon strategy. Remember, young children under 6 months of age are not able to receive the vaccine, so everyone around them should, starting with - during pregnancy for the mothers and then all the family and caretakers. All high risk children with chronic medical conditions and all children under 5 years of age -all of the contacts of all of these children really should be properly immunized.

On Slide 31, there are antivirals that are available, and the use of antivirals in children should be when there's a presumed influenza infection. All children

that are hospitalized with an influenza-like illness should receive antivirals. Also, those that are high risk of complication from an influenza-like illness should receive antivirals, and then any patient who in the judgment of the clinician feels would benefit from a decrease in the duration of symptoms.

We know that the use of antivirals is important in clinical circumstances, and it's best for the antivirals to be begun 48 hours at the onset of the symptoms. It can be given subsequent or later than the 48-hour onset of symptoms, but the best scenario is to give it early on.

We also need to emphasize the importance of clinical judgment in deciding when to use antivirals in the treatment of influenza-like illness. People should not wait until a rapid influenza diagnostic test or a rapid flu test comes back, and even if the rapid flu test comes back negative, we need to understand that the sensitivity of a rapid flu test are very low, that they're oftentimes a false negative at least 30% of the time, if not more often.

So, clinical judgment should trump a negative rapid influenza diagnostic test. And, of course, we don't want to wait for a definitive PCR test or otherwise in deciding whether or not to treat a child, particularly in the outpatient setting.

On Slide 32, we see the antiviral medications that are available for seasonal viruses. We noted that the adamantanes viruses are resistant to the adamantanes. So the only - the neuraminidase inhibitors, Oseltamivir, and Zanamivir are the only two antivirals that are available.

Then as we move to Slide 33, we see that the American Academy of Pediatrics has published a new policy recommending mandatory influenza immunization for all healthcare personnel.

On Slide 34, we see that last year there - the rate for seasonal influenza vaccine with healthcare personnel was 61%; monovalent was essentially half of that. There was a lot of concern about the new vaccine and misinformation that prevented healthcare personnel from getting the vaccine, and as you can see a little over 30% actually got both the seasonal and the 2009 H1N1 vaccine, which was recommended for all healthcare personnel.

On Slide 34 [35] the average percentage of healthcare personnel is somewhere in the 40 to 50% range. In order for there to be full herd immunity, it would be ideal for at least 80%, if not 100% of all healthcare personnel to receive the influenza vaccine each year, and the percentage coverage for the 2020 Healthy People objectives that were just released is that at least 90% coverage is encouraged.

We do know that influenza cases in healthy adults can be reduced by 70 to 90% when the vaccine is well-matched to the circulating strain in your community.

In Slide 36, these are the reasons why mandatory requirements should be implemented. As you heard earlier, there is a huge burden of influenza infection and disease on the population. We do know that the vaccine is safe and effective in preventing the disease. Voluntary strategies and other strategies earmarked to increase healthcare personnel vaccination rates have not been successful. So, it's necessary to move toward a requirement.

We strongly feel that this is ethically justified given that this is a matter of patient safety. Again, other mandatory vaccine programs have been successful. We've used TB testing, other school immunization requirements

that are mandatory, and influenza vaccine mandatory requirement in healthcare settings is just as important.

On Slide 37, we also know that mandatory influenza programs will cut costs and increase the efficient workings of healthcare settings. The concept continues to receive widespread support from various healthcare organizations and membership organizations, and there are 10's of hundreds of healthcare facilities and hospitals that have already implemented successful mandatory influenza programs.

Slide 38 lists some of the features of successful mandatory programs. It is very important that everyone is educated about influenza, both the disease and the infection and how it is spread, and treated and managed, but also about the influenza vaccine, the effectiveness of it as well as the number of doses that people need and the safety of the vaccine. that has been - the manufacturing process has been used for decades, and the vaccine is immensely successful and safe.

We also need to be sure that there's full access to the vaccine. People have had rolling carts, made it readily available throughout the influenza season so that all healthcare personnel on all shifts, weekends, weekdays, alike have access to the vaccine. There are also incentives for participation in - at Dartmouth this year, \$50 premium reduction is made for all healthcare personnel who receive the influenza vaccine.

And, again, mandatory participation should be either: receive the vaccine or a document declination of vaccination which is - -should be signed and reviewed by hospital staff.

Then the last slide, on Slide 39, is the Red Book Online. Many in the audience are familiar with the Red Book of Pediatrics, which is published every three years, and in between volumes, the Red Book Online has many of the updates and the news stories to keep everyone well-informed on management of infectious diseases.

And, as you can see on this slide, there is an influenza resource page that covers this year and is regularly updated and is available for the public at large. Thank you very much.

Dr. Georgina Peacock: And now Dr. Grohskopf?

Dr. Lisa Grohskopf: Hey, thanks. On Slide 40, on title slide, I'm going to be going over some aspects of influenza epidemiology, vaccine and some of the limitations of rapid tests.

Moving on to Slide 41, that's the title slide, Epidemiology Update. The following slides are going to be basically some general surveillance slides which are - they start on Slide Number 42. These - this is a series of slides that's updated weekly and can be accessed at www.cdc.gov/flu.

There's a weekly report called FluView. Generally it's updated on Fridays. The first two slides I'm going to show this in the subsequent one are some surveillance maps.

These give us an overview of state level flu activity as reported by state and territorial epidemiologists. The first slide here is for Week Number 47, which is the week ending November 27th at which time we noted the majority of states reporting sporadic activity but with one state, Georgia, reporting

regional activity and a scattered number of states reporting local activity, which is denoted in yellow.

And then if you move on to the next slide, Number 43, this is for the following week, this is the most recent week reported on FluView, Number 48 for the year, which is the week ending December 4, 2010. We similarly have many states reporting sporadic flu activity, but this week we have two additional states, Virginia and Kentucky, are reporting regional activity in addition to Georgia.

And also a few more states reporting local activity, denoted in yellow, including Puerto Rico, Arizona, Connecticut, Florida, Illinois, Iowa, Louisiana, Minnesota, Mississippi, New York, Oklahoma, Pennsylvania and South Carolina. But basically, a bit more activity with this week as compared to the previous, as we would expect as we continue to move towards February.

Moving on to Slide 44, this is another example of some of the slides you can see in FluView. This slide summarizes surveillance of the percentage of outpatient visits for influenza-like illness or ILI as reported to the U.S. Outpatient Influenza-Like Illness Surveillance network, or ILI Net.

Reports for this network come from over 3000 healthcare providers in all 50 states, D.C. and the U.S. Virgin Islands and the percentage of reports of the visits that are for ILI is compared with the national baseline, which is estimated to be the mean percentage of visits for ILI during the previous three seasons during non-influenza weeks.

The most recent week, again, ending December 4th, the percent of visits for ILI was 1.5%, which is below the estimated national baseline of 2.5% and that's over at the far right-hand side of the graph.

Moving on to Slide Number 45, this slide summarizes aggregate hospitalization and death reporting. This is a system that was implemented during the 2009 pandemic and since April 2010 is being continued only on a voluntary basis.

There were 17 jurisdictions that reported for the most recent week ending December 4th. For the period October 3rd through December 4th, total of 372 lab confirmed flu hospitalizations and 10 lab confirmed deaths were reported to CDC.

Slide Number 46 summarizes reporting of P&I, Pneumonia and Influenza mortality reported by the 122 U.S. city systems. The current week's data is at the far right of the graph. During Week 48, ending December 4th, 6.5% of all deaths reported through the vital statistics offices to this network were due to P&I and this is below the epidemic threshold for Week 48, which is 7.3%.

Slide Number 47 summarizes surveillance of pediatric mortality. There are four seasons represented on this slide from the 2007-2008 season through the current 2010-2011 season for comparison. The reporting of flu associated or flu confirmed deaths in children under 18 was made nationally notifiable in 2004, so lab confirmed deaths are reported to this system.

On the far right, we see one pediatric death that's been reported to this system since the 2010-11 season began. There were no deaths reported for Week 48.

Slide 48 is the last of the surveillance slides and this is just to give you an idea of the strains circulating, or at least a sample of them. This chart summarizes flu-positive test results reported to CDC by the WHO collaborating labs and the National Respiratory and Enteric Virus Surveillance System collaborating labs.

During Week 48 these labs received a total of 3572 specimens, 386 of which were positive for flu. The majority of the - slight majority were Flu A, 223 or 57.8% of isolates.

Flu B, 163 or 42.2%. Among the A's, we're still seeing circulation of 2009 H1N1 to 21 of the 386 isolates or about 9.4% were 2009 H1N1, 96 or 43% were H3 viruses.

On Slide 49, title slide for the next section, just some brief information about influenza vaccine. I'm going to be brief about Slide 50, which is our next one, because some of this was already gone over, but again, annual vaccination of all persons age 6 months and older is recommended.

The vaccine strains, as mentioned earlier, two As and one B, A California 2009 like H1N1, which is the same as the monovalent vaccine from the previous season. A Perth 2009, like H3N2, which is new for the northern hemisphere and B Brisbane 2008, which was in the 2009-2010 seasonal vaccine.

Recently through surveillance we know that 2009 H1N1, H3N2 and B strain viruses have all been identified in persons in the U.S., so we do have a situation where they are co-circulating.

Slide Number 51 lists the currently available flu vaccine preparations along with some summary information. Important to note that not all preparations are licensed and/or recommended for all age groups. For example, for the very youngest of children down to 6 months old, currently only Fluzone is licensed and recommended for that age group.

The sort of relatively more unique vaccines here, TIV, there is a high dose formulation, which is new this year, not really relevant to the pediatric population but is an alternative for those over 65 years of age. The LAIV or FluMist, which is administered intranasally is recommended for non-pregnant, healthy persons from 2 years of age to age 49.

Briefly, influenza vaccine distribution on Slide 52. The total number of doses distributed in the U.S. as of November 26, 2010 is approximately 162.8 million doses. Previous to this, the most - highest number of doses ever distributed in the U.S. in a single season was approximately 114 million doses back during 2009-2010, in other words, the last season.

Slide 53, moving on rapid testing issues. You can move to Slide 54. This table on Slide 54 is just a brief summary of some of the various general types of flu diagnostic tests available just to give an idea of relative timelines.

Viral culture, approximate test time is 3 to 10 days. DFA and IFA tests, 2 to 4 hours. RT-PCR, 2 to 4 hours. Serology, 2 weeks or more and Enzyme Immuno Assay, 2 hours, rapid diagnostic tests, or RIDTs, as we're going to abbreviate them from here on, 10 to 15 minutes, so generally, you know, you do - are able to get a quick result and that could lead to somewhat more practical use.

However, as Dr. Bernstein's has alluded to and we're going to discuss also in the future slides, there are some limitations to their use. And as we move on to Slide 55 it's a summary of some of the challenges associated with the use of rapid tests.

There are a number of factors that can influence RIDT results. One is timing of specimen collection. Ideally specimens should be collected as close to illness onset as possible, optimally within less than five days, but the sooner the better. Viral shedding also varies with age, time since onset and immune status of the person from whom the specimen is being collected.

The source of the clinical specimen also matters, so specimens can be collected from various sources, such as NP swabs, nasal swabs or throat swabs, but moving on to the next bullet, not all specimens are acceptable and validated for all assays so it's important to know about the specific assay you're using.

Other collection issues include the fact that some tests will include a swab, some may not. The materials of some of the swabs that may be available, if you don't have one that comes with your kit, may not be compatible with the assay. For example, calcium alginate swabs are generally not recommended. The time from the specimen collection to the testing, that interval can also affect the viability of the specimen and the result you will get.

Moving to Slide 56. This was some additional challenges. The first two, sensitivity and specificity are fixed characteristics of the test and they may vary from one test to the other. The sensitivity of our IDTs, as Dr. Bernstein mentioned earlier, is suboptimal when compared to RTP seroviral culture. So false negative results do occur.

Sensitivities will vary by influenza virus type, whether it's A or B, influenza A subtype and so they're going to vary depending on what strains are circulating from year to year.

Specificity of the test is another fixed test parameter. The RIDTs are relatively specific, but still, there is a low frequency of false positive results that can occur.

Prevalence of the disease, influenza in the community, can also be a major determinant or predictive values of flu tests. Positive predictive value is highest and negative predictive value is lowest during peak of influenza activity and negative predictive value is highest and positive predictive value is lowest during low influenza activity.

CDC publishes guidance, which you can see a summary of on Slide 57 regarding RIDTs, which includes a listing of the available FDA cleared RIDTs and acceptable types of specimens, information on proper interpretation of results and that can be found through www.cdc.gov/flu.

One important thing to note is that empiric antiviral treatment, again, can be started without testing or if testing is done, before the results are available. Low sensitivities of RIDTs result in many false negatives, so empiric treatment without use of RIDTs has been encouraged for clinical practice.

In other words, don't base decisions of whether to start antiviral treatment on RIDT results. Start antiviral treatment as soon as possible when indicated, because antiviral are going to be the most effective when initiated as early as possible.

Next slide, Number 58, just some final key messages. Just to reinforce, clinical decisions regarding whether to prescribe antivirals should be guided by clinical and epidemiological factors. If treatment is indicated it should be initiated promptly. You can use rapid test during influenza season if positive results will change or influence clinical management of patients with suspected influenza.

A positive result can be helpful to confirm influenza virus infection, but a negative result does not necessarily exclude influenza infection. If confirmatory testing of flu is desired, viral culture and/or RT-PCR can be done for confirmation of positive RIDT results. And that's what I have. Thanks.

Loretta Jackson-Brown: I want to thank our presenters for providing our COCA audience with such a wealth of information. We will now open up the lines for the Question & Answer session. In addition to today's presenters, we also have Ms. Laura Aird, Manager, Disaster Preparedness and Response at The American Academy of Pediatrics (AAP) Ms. Aird worked very closely with CDC during the H1N1 pandemic and presently manages the AAP/CDC Collaborative Initiative on Influenza Preparedness.

Coordinator: If there are any questions, press star 1 and record your name. When recording your name, make sure your mute box is turned off. Once again, any questions, press star 1 and record your name. And at this time, I'm showing no one in queue.

Loretta Jackson-Brown: I would ask if any of our presenters have any additional key messages that they want to emphasize with today's COCA audience.

Dr. Georgina Peacock: This is Georgina Peacock, I just wanted to emphasize, as the presenters showed us today, it does look like that we're entering into the flu season for this year and so, you know, just wanted to reiterate that now is a great time to get vaccinated and also to encourage that in your parent - in parents of your patients.

There are some resources that are available on the - both the CDC and the AAP Website. To go to the - and all of these Websites will be provided on the COCA Website, but there is www.cdc.gov/flu and www.flu.gov and then if Laura can provide the AAP Website [[www.aap.org\disasters](http://www.aap.org/disasters)], that would be helpful.

Coordinator: I do have an audio question now. Dr. Robert Ball, your line's open.

Dr. Robert Ball: Thank you very much. Thanks to all the presenters, particularly Dr. Bernstein's comments on mandatory flu vaccination was a well laid out commentary on that.

But I have a question for any of the presenters. Since we have no test to determine which of those patients, both pediatric and adult, will do well and no test to predict who is going to develop more serious complications such as ARDS, etcetera, why not strengthen our recommendations for empiric treatment for virtually all patients with strongly suspected or proven influenza, treating them with Tamiflu and also pepping the household contacts. And until we get such a test, would that not make sense?

Dr. Hank Bernstein: This is Hank Bernstein, and I can certainly understand your thinking about using antiviral therapy more liberally and I do think it's important to consider

that and I think it should be a matter of clinical judgment as well as the availability of the antiviral therapy in your local community.

But there's so many scenarios in patients that come to practices at different times that I think it really should be a matter of clinical judgment. We do want to also avoid the development of resistance because as we saw in one slide, the adamantanes don't work anymore for the current viral strains that we're dealing with in the community. So I think prudent use of the - of anti-virals is appropriate in all age groups, including children under 1.

Dr. Robert Ball: Okay, thank you. I would recommend liberal rather than prudent, but I understand.

Coordinator: I show no further questions.

Dr. Hank Bernstein: I did want to - this is Hank Bernstein again - the one thing I did want to emphasize, just because it makes up such a low - piece of our population and it's related to our pediatric population is that pregnant women really are at high risk for complications from influenza and they make up 1% of the U.S. population, yet they were also accounted for 5% of the casualties from the 2009 H1N1 pandemic.

The vaccine is very safe for pregnant women. They can receive TIV in any trimester. We do not recommend LAIV for pregnant women, just the injectable vaccine. And postpartum women, especially those in the first couple of weeks of life, are also at high risk and whether or not they're breastfeeding or using formula, they can receive either type of the vaccine.

Again, we're trying to present - protect the child through the transfer of influenza-specific antibodies from mom to baby when we immunize her during pregnancy and then we want to reduce the risk of exposure to the newborn since the mother is now protected.

And, there are studies that have demonstrated a reduction in the risk of influenza-like illness hospitalization for infants and the number of confirmed influenza illnesses amongst infants in the first 6 months of life. So, I do want to emphasize the importance of the cocoon strategy and especially for pregnant women.

Laura Aird: Hi, this is Laura Aird, I wanted to, before we closed, add the Website that Dr. Peacock was referring to. It's listed on Slide 18 and it's [www.aap.org\disasters](http://www.aap.org/disasters) and there's a link right in the middle of the page that relates to influenza preparedness. Thank you.

Loretta Jackson-Brown: Operator, do we have any more calls? Questions. Excuse me.

Coordinator: No, there is not.

Loretta Jackson-Brown: Okay. On behalf of COCA, I would like to thank everyone for joining us today with a special thank you to our call moderator, Dr. Peacock, our presenters, Drs. Schonfeld, Bernstein and Grohskopf.

If you have additional questions for today's presenters, please email us at coca@cdc.gov. Put the presenter's name in the subject line of your email and we will ensure that your email is forwarded to them for a response. Again, that email address is coca@cdc.gov.

The recording of this call and the transcript will be posted to the COCA Website at emergency.cdc.gov/coca within the next few days. Continuing education credits are available for this call. Those who participated in today's COCA conference call and would like to receive continuing education credit should complete the online evaluation by January 21, 2011 using course code EC1648. That is "E," as in "Echo," "C," as in "Charlie," and the numbers 1648.

For those who will complete the online evaluation between January 22, 2011 and January 21, 2012, use course code WD1648. That is "W," as in "Walter," "D," as in "Delta," and the numbers 1648. All continuing education credits and contact hours for COCA conference calls are issued online through TCE Online, the CDC's training and continuing education online system at www2a.cdc.gov/tceonline

To receive information about upcoming COCA calls, please subscribe to COCA by sending an email to coca@cdc.gov and write "subscribe" in the subject line. Thank you again for being a part of today's COCA conference call. Have a great day.

Coordinator: Thank you. That concludes today's conference. Everyone may disconnect at this time.

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