



BILL SCHAFFNER: Good morning, everyone. I'm Dr. Bill Schaffner, medical director of the National Foundation for Infectious Diseases, or NFID. I'm also professor of preventive medicine in the Department of Health Policy and Infectious Diseases at Vanderbilt University School of Medicine. On behalf of NFID, I'm pleased to welcome you all here this morning to talk about influenza; better known as the flu.

Two quick announcements before we get started. If you're tweeting, please join the conversation using the hashtag #FightFlu. If you've not yet done so, there's still time to join the CDC-NFID Thunderclap before 10:30 AM today. The list is available on the NFID website at www.nfid.org.

Now, for more than 20 years, NFID has gathered partners in the medical and public health communities to address the unique challenges of each flu season and, as they say, if you've seen one flu season, you have seen one flu season. Every year, the flu season may vary. But one thing remains consistent: we've all come together to advocate strongly for influenza and pneumococcal disease prevention.

This year is no different. Joining us today is Dr. Thomas E. Price, US Secretary of Health and Human Services, who's our keynote speaker. It's an honor to have Dr. Price with us to share the latest data on how we're doing as a nation in our vaccination efforts and what to expect this season.

I'd also like to welcome our distinguished panelists. Patricia "Patsy" Stinchfield is a pediatric nurse practitioner in infectious disease at Children's Minnesota, who specializes in vaccine preventable diseases. She's the senior director of infection prevention and control at Children's Minnesota. Patsy is also a member of the NFID board of directors, and she served as the first nurse voting member of the Centers for Disease Control and Prevention Advisory Committee on Immunization Practices, the ACIP.



Dr. Kathleen "Kathy" Neuzil is the director at the Center for Vaccine Development and deputy director of the Institutes for Global Health at the University of Maryland School of Medicine. She's also a member of the NFID board of directors, and she serves as ACIP liaison on behalf of the Infectious Diseases Society of America.

My colleagues here are all experts in their fields and are as passionate as I am about the importance of public health and disease prevention through vaccination.

Dr. Price will begin by addressing vaccination coverage in the United States and influenza vaccines available for this season. Following Dr. Price, Ms. Stinchfield will talk more about why flu vaccination is particularly important for children. Dr. Neuzil will then discuss the significant impact of flu on older adults, why and when to get vaccinated, and specific influenza vaccines designed to boost immunity in the 65-plus population. She'll also discuss the importance of pneumococcal vaccination in protecting vulnerable populations.

We're pleased to have a strong showing of support from our partners who represent public health, medical societies, government, industry, advocacy, and consumer-focused organizations.

The good news is that influenza vaccination coverage across the US population is substantially higher today than it was 20, or even 10 years ago. And we now produce an ample supply of vaccine and vaccination options. If you're at least six months of age in the United States, there's a flu vaccine for you. However, despite all this, we're still not meeting US public health goals for influenza vaccine coverage among individual age and risk groups. So we must keep working hard to enhance those coverage rates.

Influenza, as I've said, is an unpredictable infectious disease. I like to say that flu is fickle. During any given season, millions of people are sickened, hundreds of thousands are hospitalized

and thousands or tens of thousands of people die from flu and its complications. I'm often asked how severe will the season be. It will be severe and there will always be a flu season.

Annual flu vaccination is our first and best line of defense to prevent flu. So I'd like to be the first today to urge everyone to get vaccinated against flu. We don't have to think about it. CDC recommendations are very straightforward. If you're older than six **months** of age, you should get vaccinated against flu each and every year. And, for healthcare professionals, it's critically important that we lead by example, by getting vaccinated to protect our patients and ourselves.

I also want to remind everyone of the CDC Take Three approach to flu prevention. In addition to annual vaccination, this includes practicing everyday preventive actions to help prevent the spread of flu, such as handwashing and avoiding contact with sick people, as well as the use of antivirals in treating flu.

Following the panelists' presentations, there will be a Q&A session for the media.

It's now my pleasure to welcome Dr. Price. [applause]

TOM PRICE: Thank you, Dr. Schaffner, so much for that introduction and for allowing me to join you today. It's a great privilege to join Ms. Stinchfield and Dr. Neuzil for what is an incredibly important topic. And Dr. Schaffner, I want to thank you so much for your work at NFID. It's always an honor to be introduced by a veteran of the United States Public Health Service Commission Corps. It's also an honor as a physician and as HHS Secretary to join this event today, and to raise awareness about a key public health issue.

Vaccines are among the greatest public health achievements of modern times but they're only as useful as we as a society take advantage of them. So I'm thankful for the work of CDC and NFID and our panelists today in shedding some sunlight on this topic that has a major impact on the

health of our nation every single year, and that is, Dr. Schaffner mentioned, the issue of influenza.

In my brief remarks this morning, I'd like to remind everyone about the burden that flu puts on the American people and our families and our communities. I'd like to discuss the current situation with regard to flu vaccines, explain a little bit about the larger context of influenza and the potential for pandemics. And most importantly, as Dr. Schaffner mentioned as well, encourage everyone six months and older to make flu vaccination part of their yearly routine.

So let's start with what influenza is. And it's not just a simple couple of days at home with a runny nose. It can be a lot worse than just a few days away from school or work. It is a potentially serious respiratory illness that can lead to hospitalization, and sometimes death. This is especially true for certain groups of people; specifically, older adults, pregnant women and people with certain long-term medical conditions, and young children.

But even young and healthy adults can suffer severe complications from influenza. The public health consensus is very straightforward. It's important for everyone six months and older to get a flu vaccine every year. By the end of these remarks, my remarks and those of the folks on the panel here, we'll all join together and say: Six months and older, for everyone to get a flu vaccine.

And it really is remarkably easy. There are thousands upon thousands of places across the country where you can get your flu shot. If you go to *CDC.gov/flu*, f-l-u, there's a flu vaccine finder where you can plug in your zip code and choose from many, many places.

Again, the stakes are very serious. Each flu season, flu causes millions of illnesses, hundreds of thousands of hospitalizations, and thousands or sometimes tens of thousands of deaths. The seriousness of each year's flu varies significantly. CDC estimates that since 2010, flu-related

hospitalizations in the United States have ranged from a low of 140,000 to a high of 710,000. During that same time, the CDC estimates that the flu has killed between 12,000 and 56,000 people each year.

But whatever it looks like in a given year, these numbers are far too high, especially when we consider that there's a vaccine that could prevent the significant portion of this disease. Unfortunately, CDC's annual look at the number of people who report getting their flu vaccine shows that these numbers have actually plateaued; they've leveled off. Among people six months and older, flu vaccination coverage during the 2016/2017 flu season was 46.8%, leaving more than half of all Americans unprotected from the flu.

Even when vaccine effectiveness is on the lower end, it still prevents a great deal of suffering and illness. And with vaccine effectiveness of 42% last season, CDC estimates that the flu shot prevented about 5.4 million cases of the flu; 2.7 million doctor visits; and 86,000 hospitalizations. With just a 5% increase – a 5% increase – in vaccination, the CDC estimates that another 490,000 illnesses and 7000 hospitalizations could have been avoided.

So we've got a lot of room for improvement.

Because flu shots are produced by the private sector, by private sector manufacturers, supply does depend in part on demand. Manufacturers project that they will provide between 151 and 166 million doses of vaccine for the US market this season in different formulations. Last season, 146,000 million doses were distributed.

This season, flu shots as opposed to the nasal spray vaccines are recommended. Beyond that, while there are many different vaccine options for consumers, there is no preference for one vaccine over another; one is just as good as another.

We know that flu vaccines aren't perfect, as I mentioned. Vaccine effectiveness ranges somewhere between 40-60% each year. And that means that a person's risk of getting sick with the flu and needing to see a doctor are 40-60% less than someone who didn't get vaccinated, which are pretty good odds. We also know that flu vaccine can prevent serious health challenges, including hospitalization.

Now obviously, we'd like to see even more effective vaccines, and we're working on that through investments. Through both the private sectors in places like NIH and CDC, and in the private sector, we're making improvements to existing vaccines. We're also working on something very, very exciting at NIH, something called the universal vaccine that would provide long-lasting immunity against many different flu viruses, including bird flu viruses that have the potential to cause catastrophic influenza pandemic.

I'd also like to briefly mention vaccines that protect against another serious disease, and that's pneumococcal disease, as was mentioned. Pneumococcal can cause a range of serious illnesses, and is a common and deadly complication of influenza. Each year in the United States, about 520,000 adults 65 or older get pneumococcal disease, and each year about 18,000 of them will die.

There are two types of pneumococcal vaccine recommended for use in adults. The CDC recommends pneumococcal vaccination for everyone age 65 years and older and for adults with certain chronic health conditions, like diabetes and heart disease and lung disorders, as well as for people who smoke.

When adults are getting their yearly flu vaccine, it's a great time to make sure that you're up to date on your pneumococcal vaccines and other recommended vaccinations, things like pneumonia and shingles and hepatitis and tetanus. The recommendations on these vary, depending on your health status or lifestyle or travel plans and the like, so it's important that you

talk to your doctor and discuss with him or her the importance of vaccinations that you believe are important and that you'd like to take part in.

Vaccines including flu and pneumococcal vaccines are available in many places. So there's no reason not to get protected from these serious diseases. Adults can get their vaccines at doctors' offices, at pharmacies, at work places, in community health centers, and so many other areas.

I'd like to touch briefly on understanding the seriousness of the flu that is sometimes aided by a little bit of historical perspective. Next year, 2018, is the 100th anniversary of the Spanish flu. And while that's a long time ago and a long time before all of us were born, my grandfather, who graduated from medical school in 1908, was ten years in practice at the time of that deadly pandemic. So it's not ancient history.

The Spanish flu infected fully one-third of the world's population. Think about that – one-third of the world's population infected. Fifty million people died worldwide, including 675,000 Americans. That's almost as many lives as were lost in the entire Civil War in just a year.

The catastrophic impact of the 1918 pandemic has left a lasting legacy and informs us as we prepare for another. Influenza's ability to jump from animals to people poses one of the world's greatest infectious disease challenges, and our annual efforts to protect against seasonal flu are the foundation for our response to a pandemic. At HHS, we take the work of pandemic preparedness extremely seriously. And President Trump and this administration are deeply committed to building relationships around the world to reinforce global health security. So the United States and other countries have also invested deeply and strategically in national vaccine preparedness, and we've had the chance to see that firsthand at vaccine production and research facilities, both here at home and abroad. HHS and private partners are constantly researching new ways to generate more pandemic vaccines cheaper and faster. And we aim to continue investing in those capabilities.

So in closing, let's revisit how each and every one of us can take charge of our own health and prepare ourselves for flu season. Again, the three-step approach: First and best defense is to get a flu vaccine. Everyone six months and older – say it together, six months and older – should get an annual flu vaccination. It's best to get vaccinated before flu activity starts, and that's usually in October. So the time is now. Remember *CDC.gov/flu*, f-l-u. You can look at that site, *CDC.gov/flu*, to find where vaccines are able to be provided near you.

Doctors and other providers are incredibly important in this. Your recommendation as a physician and as providers are crucial to motivating your patients to get vaccinated. It's also in my opinion for physicians and other providers to get vaccinated themselves to protect yourself and to protect your patients.

The flu viruses that circulate change from season to season so it's important to get an influenza vaccine every single year.

The second step that we recommend for fighting the flu is to take everyday preventive actions to stop the spread of germs. Stay home if you're sick. Avoid people who are ill and sick. And as always, practice good hygiene – washing your hands and covering for coughs. And remember, covering for coughs means you cough into your elbow not into your hand, which is incredibly important.

And last but not least, take the flu antiviral drugs if your physician prescribes them. We want those who are very sick and those who are at high risk of serious flu complications to get treated quickly. Taking antivirals early if you're sick can prevent more serious outcomes.

But we don't want to have you get to that point, so make flu vaccination a healthy habit each and every year. And as I mentioned, the time is now.

So I want to thank you very much for your time today. I want to challenge you to spread the word about flu vaccines and spread the flu. Just as a demonstration of the importance of flu vaccinations, I'm here to get my own flu vaccine today.

Thank you so much. [applause]

BILL SCHAFFNER: Dr. Price, thank you very much for that good information and call to action. I just would like him to know that we're particularly pleased that an orthopedic surgeon is working to prevent flu. You know, surgeons are very incisive, and you're making very incisive remarks.

And we thank Sharon Walsh-Bonadies from MedStar Visiting Nurse Association for right now administering the vaccine. Sharon, there you go!

[applause]

TOM PRICE: Thank you so much.

BILL SCHAFFNER: Thank you, Dr. Price. We're grateful to him for leading by example. We'll say our goodbye to Dr. Price and several other folks. We know that he's heading off to many other important meetings today.

So let me quickly focus on a few key data points that Dr. Price mentioned. About 78% of healthcare personnel reported receiving vaccination during the 2016 to 2017 season. Vaccination coverage continued to be higher among healthcare personnel working in hospitals. These large institutions are really getting it done; they're getting all of their personnel vaccinated. However,

the rates are still lower among healthcare personnel working in ambulatory and long-term care facilities. So we as healthcare professionals still have work to do there.

In addition, about 53% of pregnant women reported vaccination before or during pregnancy. That's a great measure of progress, but you can see roughly half of pregnant women during the influenza season still did not get vaccinated. So we all have to do more work there.

That said, it's now my pleasure to introduce Ms. Patricia Stinchfield. Patsy?

PATSY STINCHFIELD: Good morning. Thank you, Bill. I'm so pleased to be here today to talk about the importance of flu vaccine in children. So as a pediatric nurse practitioner, I often here people say, "Oh, it's just the flu." And I think they might be confusing things with some more mild diseases, such as the common cold or maybe a mild stomach flu. But if flu was "just the flu," a runny nose, a cough that you got over quickly, we would not vaccinate.

Unfortunately, flu is very severe. And I have to remind everyone that children do die of influenza. In the US alone, last year, 105 children died of influenza. And this is well below the number of average deaths per year. Even back in the 2009-2010 season, we saw as many as 358 children die of influenza.

In addition to pediatric deaths, CDC estimates that since 2010, flu-related hospitalizations among children younger than five years of age have ranged from 7000 to 26,000 children in the hospital every year. Working in a children's hospital as I have for 30 years, we take care of the sickest of the sick, and I can tell you I have seen way too many children in the ICU on ventilators who have died than I ever care to remember. It's a very sad situation for everybody – those who care for them and their families.

While severe influenza complications are most common in children younger than two years of age, I want to remind us that bad outcomes can happen to anybody. It can be in all ages, in children with underlying chronic diseases such as asthma or neurological problems where they'll have difficulty with their secretions, but also in healthy children with no chronic diseases; healthy adults as well.

So that's why I believe the words "just" and "flu" should not be in the same sentence. Unless, of course, you're going to say, "I just got my flu vaccine." I'll take that.

So the annual vaccination is the first and most important step in protecting children against influenza. Data that came out earlier this year really adds to the strong body of evidence about the benefits of influenza vaccine for children. There was a recent publication in *Pediatrics* that showed influenza vaccine reduces the risk of flu-associated deaths by 51% of children who have underlying chronic conditions, and by 65% in healthy children. It is the right thing to do to vaccinate our children.

And we recently, as Children's Minnesota, where I work, completed a three-year look-back of three seasons of influenza, and we compared severe influenza disease for those with less severe. And we're waiting for a publication notice, but I'll just tell you what we learned, and it's similar to what was in *Pediatrics* – that kids of all age–, in ours we had 404 children over three seasons with influenza, age one day to 18 years. They were healthy kids, they were kids with chronic illness. But the three things that really stood out, in the more severely ill children, 57% of them had not had a flu vaccine.

We also know that those children who were more severely ill stayed home longer before they came to the hospital. So if you as a parent have that gut feeling that your child is ill and that you're worried, listen to that gut. Bring them into the hospital sooner than later. That's what we're

doing there. That's why we're in clinics and hospitals, to care for you. So if you're worried, it's better to get them checked than not.

And then also, we also realized that we as clinicians play a role in more severe illness. Children who had one or more missed opportunity to vaccinate had more severe illness. So as you bring your child to a clinic, an ER, a hospital, make sure you ask as a parent, "Does my child need any vaccines? Does my child need a flu vaccine?" And we as a clinician, whether it's a healthy, well child check, a sports physical, or a broken wrist should say, "Hey, it's flu vaccine season and I see you haven't had yours." Let's make sure we as clinicians don't have missed opportunities.

Because the risk of severe outcomes among children is high, but I'm pleased to see that 76.3% of children in the US age six to 23-months-old were vaccinated last season, exceeding the national public health goal of 70% vaccine coverage as outlined in the Healthy People 2020 goals. So that is great.

However, this is the only age group of children, and in fact the only age group overall that met the goal. Influenza vaccination, the coverage decreases as children get older. So we're good at vaccinating those younger kids, but your teenager is just as important. Our goal is to increase coverage for children all ages, as every child deserves to be protected.

Although their personal protection is reason enough, it's not just about the kids. If your child gets the flu, they expose everyone around them. This may include babies in the household too young to be immunized, those less than six months of age. It may include grandparents who may be immune suppressed or have other chronic illnesses. It may include a pregnant woman. We must make sure that we vaccinate those that we can to protect the individual, the whole family, as well as the public at large.

It's our responsibility as parents to make sure that children are protected. And as healthcare professionals, it is our responsibility to be clear, speak up, loud and clear. The evidence shows that that is the single most effective thing for someone to change their thoughts about flu vaccine, is if they get a clear recommendation from their healthcare provider. That family will more likely be vaccinated.

So I challenge all of us healthcare professionals to make sure that we give clear, strong recommendations that influenza vaccine is the best, safest way to prevent a potentially life-threatening disease. So we need to make every visit a vaccine visit. Ask. Assess.

I want to make sure that we don't miss an important detail about pediatric influenza vaccine. And that is, if you are a child who has never had a flu vaccine and you're between the ages of six months through eight years, this is your first season, you need two shots one month apart. So one vaccine, and then four weeks later a second vaccine in that same season. So that's a nuance just for young children, first time vaccinated. If you were vaccinated in the year prior, you'll only need one this year.

And finally, protection should start even before babies are born. Vaccinations of moms-to-be during any trimester is important to protect both them and developing babies against influenza.

It's our shared responsibility to fight flu – or should I say #FightFlu – protect our children, our communities, and to help keep them safe and healthy. So let's make annual influenza vaccination a routine part of our childhood healthcare. I challenge us as parents and healthcare professionals to ensure that as many children as possible get vaccinated this year. We can and must do better.

Thank you. [applause]

BILL SCHAFFNER: Patsy, thank you for your good remarks. And Dr. Neuzil, Kathy?

KATHY NEUZIL: Thanks, Bill, and thanks to everyone who preceded me. They've certainly made my job easy. I'm also very happy to be here to really advocate for a topic that I'm very passionate about. And that is that everyone receives influenza vaccination.

I think you've heard the message fairly loud and clear, that influenza affects persons of all ages. So I will just address in the next few minutes really the particular concern and the public health burden of people 65 and over. We've heard that everyone is susceptible to influenza. It is not a common cold. It is not a fun disease. Some of the terms I've heard from my patients are: "I feel like I've been hit by a truck." It makes you feel terrible. You don't want to work. You don't want to go to school. You don't want to take care of your grandkids. Whatever it might be. And while the illness is self-limited in most people, there are consequences that can last for weeks. You may have a cough for even months afterwards.

But for certain segments of the population, influenza can be deadly. People 65 and over account for about 85% of the flu-related deaths that occur in this country. They also account for the majority of the hospitalizations that occur in this country. So again, we know that older people are a very heterogeneous group, but in general, as your age increases, and as your frailty increases, you are more likely to have the severe consequences of influenza. And that's true at the other end of the spectrum as well, as Patsy clearly emphasized.

This is why it was particularly concerning a couple years ago when we were actually seeing declining trends in coverage among people over 65. The good news last year was that those trends appeared to be stabilizing. And what we'd like to see this year is a real increase. Even if we're at a 65% level, that means a third of people 65 and over still aren't getting influenza vaccine. Now, I'm an overachiever, as are most people in this room. A 65% is a C or D in my book. And so, again, we really need to try to get an A for influenza vaccine coverage.

So let's talk a little bit about influenza vaccine and, again, why me. What if I'm the healthy older person who's traveling, who's working. We see more and more people working and are vibrant into their 80s. And again, there's certainly an increase with age that they end up in the hospital, but as I've already pointed out, influenza can affect their day-to-day activities. But protecting others, as Patsy pointed out, should be a powerful motivation for all of us to get our influenza vaccine.

I think there are very few of us, maybe there's no one in this room that doesn't have contact on a daily or weekly basis with either grandparents or grandchildren or somebody with cancer or underlying lung or heart disease. I very vividly remember a patient that I took care of who was brought in from an extended care facility with a severe influenza pneumonia. She had been there for months, so she wasn't out circulating in the community, exposing herself to influenza at the grocery store. We brought influenza to her. So either the healthcare workers in that facility brought her influenza, or her family member or friends brought her that influenza.

So we all really need to think about that. And for older people, it's especially important. You may be taking care of a spouse that's more frail than you are. You may be taking care of a four-month-old grandchild who's too young to receive influenza vaccine.

Now, influenza vaccine does work in people 65 and over. It not only prevents illness, but we have evidence, recent evidence that it also reduces the severity of illness. So even if you get flu, it's going to be less severe than if you hadn't received the flu shot. So you're less likely to be hospitalized with influenza.

The other good news is that the influenza market has responded. And we actually now have two new influenza vaccines on the market in the last few years to particularly address this issue of preventing influenza in the elderly. So as we get older, and I include myself in this group, we

know that the age-related declines in the immune system can start as early as 50, I'm reluctant to admit. Our immune systems aren't as robust in responding to influenza vaccine.

And so, in older people, again, we now have a high-dose influenza vaccine, which is exactly what it sounds like. It's the same content of the influenza vaccine that everybody else receives, but it's four times the dose, four times the antigen. And it has been shown to improve the immune response in people over 65, and prevent more illness and hospitalizations in people over 65.

Similarly, with the adjuvanted vaccine, it's an additional ingredient that boosts the immune response.

So we encourage people over 65 to talk to their physicians about what might be the best choice for them. I think the most important message is, any flu vaccine is better than no flu vaccine. So we shouldn't wait to get a different vaccine. But again, if there's a choice we should encourage people to talk to their physicians about the choice.

Bill used the term "flu is fickle." I use the term "flu is predictably unpredictable." It can occur at any time. It takes about two weeks after you get the flu vaccine to get that immune response that you need to fight the flu. So again, we don't want to wait. We want to get the flu vaccine now. In case it hits in October, it hits in November, we will all be ready.

Dr. Price mentioned the resources available on the CDC website. I'll just quickly mention that there are also resources available on the NFID website. And I believe that many of these are being distributed, or again you can go to *NFID.org*. So we really have a lot of information at our fingertips.

And then finally, as Dr. Price mentioned, pneumococcal vaccination is also critical for adults 65 and over, for younger adults with a number of medical conditions – again, heart disease, lung disease, diabetes, people who smoke. And so, this is a really good time. We're heading into flu season, but we're also heading into pneumonia season in the winter. It's a very good time to also encourage people 65 and over to get their pneumococcal vaccine.

So again, I think we can all help fight flu by making annual influenza vaccination a priority, by making pneumococcal vaccination a priority; that's not a yearly vaccine, fortunately, that's a one-time for people 65 and over. And similar to Dr. Price, we are all going to step up and get our influenza vaccines today.

Thank you. [applause]

BILL SCHAFFNER: Thank you very much, Kathy. And we're now ready for our Q&A. To begin, I'm going to ask Dr. Dan Jernigan, who's with the influenza unit here at the CDC, to come on up and join us here at the podium and the microphone. He'll be able to answer some of your questions, also.

We're going to have two roving microphones. Please indicate if you have a question, and these folks will find you. Please remember to identify yourself and the media outlet you represent.

For the media participating by teleconference, the operator will come on the line momentarily to advise you how to submit your question.

And finally, if you wish to schedule one-on-one interviews with any of the panelists or members of the supporting organizations present, one of our staff here can arrange that for you immediately after the news conference.

Now we're happy to receive your questions.

LAURAN NEERGAARD: Luran Neergaard with AP. This question is for Dr. Jernigan. Given that the World Health Organization meeting just recommended changing the H3N2 component of the vaccine for next year, what does that signal to us as we use the existing one this year? How good do we expect it to be? And what do we make of the fact that it was a pretty tough year in parts of the Southern Hemisphere?

DAN JERNIGAN: It's a great question. There was quite a lot of media coverage of the influenza season in Australia. Exactly whether that was because it was sort of localized in a lot of places and happened very quickly in a lot of places may have been a reason for a lot of media attention on it. But clearly, it was a severe season in Australia this summer.

The season that we had last year, in the 2016-2017 influenza season was also a moderate season. It was a season where we had almost 600,000 hospitalizations. That's almost as high as the 2014-2015 season. I don't know if you remember that one. It was a very severe H3N2 season. So we had a bad season last year; Australia's having a bad season this summer. Does that mean we'll have a bad season this fall? We don't know exactly, but we want to be prepared for that, and it's one reason why it's important to get your vaccine.

For the vaccine component decisions, WHO does make those decisions in February for the Northern Hemisphere the following fall. And the decisions they're making right now are for the summer, next year, in the Southern Hemisphere. And so, they're continually looking to see, are there ways that they can make that vaccine better by updating it.

And so, the decision they made with the H3N2 component was really to address better performance of that particular vaccine virus, the H3N2 virus, in egg manufacturing. So there's

been a little bit of drift, some change, but there's not been a significant mutation in the H3N2. The change was really made so that the vaccine that comes out made in eggs is a better vaccine.

Right now, there are two vaccines. The FluCelVax, which is made in cells in the flu block, which is made just with proteins, those aren't affected by this change.

BILL SCHAFFNER: So basically, Dan, as we were talking about just before the news conference, those proteins on the outside of that H3N2 virus are still quite similar to what's in the current vaccine. So we ought to be well prepared. This H3N2 strain is the one that usually causes, as Kathy will say, more illness, more complications in older adults. So if you needed another reason to be vaccinated, there it is. Best get that protection.

Other questions, please?

PHIL GALEWITZ: Phil Galewitz with Kaiser Health News. What do you attribute to the plateauing of the vaccination rates? And particularly in the lower states; like Nevada has by far the lowest rate in the country. What's going on in Nevada? Have you talked to health officials there?

BILL SCHAFFNER: Perhaps all those folks are in casinos. I don't know. There's a frequency distribution, obviously, across. And I at least have no insights. Perhaps my colleagues want to chip in about the vaccine performance from state to state. Because there is substantial variation. Anybody have any good ideas? Dan?

DAN JERNIGAN: Certainly there is variation from state to state. Different states handle things differently. There are differences in race/ethnicity in terms of who actually gets their vaccine as well. So there's lots of different factors. For this one, why Nevada, I don't know. I'm not going to comment on Dr. Schaffner's statement.

BILL SCHAFFNER: Disassociating himself from my facetious remarks.

DAN JERNIGAN: But the overall plateau I think is just a reflection of— this is not an easy thing necessarily to do, to get a vaccine every year. There are many places to get it, but still people are very busy. We're trying to get a part of the population that doesn't normally get vaccines, which is the older population, people in the 18-to-49 years. Those are folks that who just aren't used to doing it.

And so, I think part of this is getting folks out there, seeing the benefits of getting vaccinated, and just having them do it.

BILL SCHAFFNER: And I think we as providers have to become even more forceful. It's one thing to say to a patient, Tom or Jane, "It's that time of the year. You ought to consider getting flu vaccine." As far as I'm concerned, that opens the door for the patient to leave unimmunized. It's different to say, "It's that time of the year. We're vaccinating everyone in our practice. You'll be vaccinated on the way out, just as I've been vaccinated." So, being a vaccine insister rather than a vaccine recommender.

Other comments, please. Suggestions? Questions? We have one from the teleconference.

OPERATOR: So we have a question from Kathleen Doheny with WebMD. Please proceed with your question.

KATHLEEN DOHENY: Hi, good morning. Dr. Neuzil, you had said for older adults there's statistics about it not only prevents illness, but in recent evidence it reduces the severity of illness. Can you give us a citation for that?

KATHY NEUZIL: Sure. There are a few citations. The most recent one was in *Clinical Infectious Diseases* this year. I'd have to give you the exact PMID number afterwards, but I'm happy to. It was a citation out of a Canadian network.

And I think the other interesting aspect of that publication is that in certain adults over 65 years of age, that vaccine was up to 78% efficacious in preventing hospitalization. So flu may be like other vaccines, where we're used to hearing the 50% number, and that's relatively mild disease. But in fact, we have more evidence now that the protection is likely greater for more severe disease. And I'm happy to give you the citation.

KATHLEEN DOHENY: I think I can find it just with that. *Clinical Infectious Diseases* this year.

KATHY NEUZIL: Well, and look for the editorial by Neuzil.

KATHLEEN DOHENY: Okay, that's good enough. Thank you so much.

BILL SCHAFFNER: Let me just add to that. We all know that influenza vaccine is not a perfect vaccine, but it's a pretty darn good vaccine. We see the effectiveness rates and we're always a little bit disappointed. What's not in those effectiveness rates is the partial protection that is given to people who might have been vaccinated, gotten influenza, but they didn't have to go to the hospital, be admitted to the intensive care unit. And as I like to say to some of my patients who said, "But Dr. Schaffner, you gave me the vaccine and I still got flu," and I said, "I'm so pleased that you're still here with us to complain. Because you didn't die of influenza. So I think that that's very important.

The flu vaccine, I like to quote – paraphrase – that old French philosopher Voltaire who said, "Waiting for perfection is the great enemy of the current good." And with this pretty good vaccine, we can do an awful lot of good.

There's a question right here.

HEIDI SPLETE: Hi, Heidi Splete, Internal Medicine News. Thank you so much for doing this every year. Since it's so important for healthcare providers to be able to really insist and to make that push to their patients, what are some barriers that you are still finding as far as the healthcare providers themselves getting vaccinated, so that when the patients ask, "Have you had yours," they can say that they have?

BILL SCHAFFNER: Kathy, do you want to talk to that? Or Patsy first?

PATSY STINCHFIELD: This is one of my tasks at Children's, to get our 6500 employees vaccinated. And so, I think a lot about your question. I think it's really about understanding the importance of it, about making it easy and accessible. No charge. Making it such that we'll come to you; where is your staff meeting. We do so many different interventions at Children's. We don't have a mandate as some hospitals do. But even in a unionized nursing environment, without a mandate, our staff are vaccinated at 94% year after year.

So it's really emphasizing the importance and making it easy and accessible.

BILL SCHAFFNER: And I would also say support from the highest level of administration, all the way down to everyone working in the hospital. Vanderbilt is pleased to join you. Our vaccination rate is over 90%, also.

KATHY NEUZIL: Really not much else to add. I agree with you. I think the issue is understanding the barriers and then removing those barriers. And access is certainly one. Being able to provide multiple different types of vaccine is another. We do have a mandatory policy at Maryland. We are also, at the University of Maryland Medical Center, we are also in the high 90 percentages.

It's interesting. It's been shown that, and Dan could probably comment more specifically, but the nurses, the physicians, the people in the hospitals who have regular contact, we're actually doing very well with those vaccination rates. It's some of the other workers that you're referring to, Bill, who we probably haven't done as good a job at educating the support staff sometimes in the hospitals, that we aren't doing quite as well on if you break down that healthcare worker box.

So again, we need to take the same approaches. We need to educate them. We need to make it easy for them to get vaccine in the same way we've done it for the physicians and the nurses.

BILL SCHAFFNER: And just to make clear, it's a patient safety issue. We don't want to give flu to the patients for whom we are providing care.

Another question, please?

PATSY STINCHFIELD: While the microphone's going over, I'm just going to add. It's a shot. And even grownups don't like shots. People don't like needles. And healthcare professionals actually have needle phobia, just like the general population does. So making that event, the pain part of shots, less is not just something to think about for children. It's important to think about for adults. So what can you do? When you go to get your flu shot, which all of you will do, I'm certain. Breathe through your mouth. Just relax. Relax your arm, let it hang down like a spaghetti noodle. Hold it out just slightly from your body. And then imagine your favorite place in the whole wide world. Just take yourself someplace else, and before you know it it'll be over.

BARA VAIDA: I'm Bara Vaida. I'm an independent writer here in DC. There's evidence that the vaccine makes a difference in children and those over 65. But there's not the same evidence for healthy adults. There seems to be very little of that; it's modest. And I wanted to know why is that, and what's being done about that.

KATHY NEUZIL: I'm not sure I totally understand the question. In terms of evidence about flu vaccine efficacy?

BARA VAIDA: Cochrane analysis from 2014 showed very little for healthy adults.

KATHY NEUZIL: For the efficacy or for the burden? I think there's two issues. First of all, is influenza a bad illness? So in otherwise healthy people, who, again, don't have underlying disease and young or middle-aged adults, they are far less likely to end up in the hospital or die of influenza. As Patsy's pointed out, it still happens; it happens every single year in young, healthy college students and 40-year-olds.

For influenza vaccine efficacy, I would actually disagree with that. There are certainly randomized placebo controlled trials in addition to our yearly observational studies that support that influenza vaccines do work in the young and middle-aged healthy population. Certainly immune responses are most robust in that population. And that is most of our evidence now. Generally, randomized controlled trials are very expensive to do. And how many do you need to do to show that the vaccine works?

But again, I am very happy afterwards – I think it's a very specific question for this audience – to provide you with those papers and those trials that show the vaccine works in that population.



BILL SCHAFFNER: Further questions, please. No questions? Not coming from the media?
All right, thank you very much.

I thank you all for joining us. As we do every year, let's hope for a quiet flu season. But as we've heard from our panel of experts, the best defense is a good offense. We all invite you to get vaccinated to help fight flu. Our nurses in the back will be happy to accommodate you. We have plenty of vaccine. You all should get vaccinated also to help fight influenza.

We thank you again for getting this message out to the general population of the United States. You're doing a terrific public health service, each and every year.

Thanks to my colleagues and friends here as panelists, and thank you, too. Thank you very much.
[applause]

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