



**DR. WILLIAM SCHAFFNER:** Good morning, everyone. I'm Dr. Bill Schaffner, I'm medical director of the National Foundation for Infectious Diseases, and I'm also a professor of preventive medicine and infectious diseases at the Vanderbilt University Medical Center in Nashville, Tennessee. Welcome to the annual influenza pneumococcal news conference.

On behalf of the NFID, the National Foundation for Infectious Diseases, I'm pleased to welcome you all here this morning to talk about influenza, flu. One quick announcement before we get started. If you're following on Twitter, please use the hashtag #FightFlu.

For the past 20 years, it's now the 20<sup>th</sup> anniversary of this press conference, NFID has gathered together partners in medical and public health communities to address the challenges of the upcoming influenza season. And there's always an upcoming influenza season. Together, we've campaigned for influenza and pneumococcal disease prevention with one strong voice. Joining us today is Dr. Tom Frieden, director of the Centers for Disease Control and Prevention as our keynote speaker. It's an honor to have Dr. Frieden here to share the latest data on how we're doing as a nation in our influenza and pneumococcal disease prevention and vaccination efforts and what we can expect this coming season.

I'd also like to welcome and introduce our distinguished expert panelists, Dr. Patricia Whitley-Williams, who is NFID vice president and is a pediatric infectious diseases physician at Rutgers Robert Wood Johnson Medical School. She's also a liaison member to the advisory committee on immunization practices representing the National Medical Association.

And Dr. Wilber Chen, who treats infectious diseases in adults and is an associate professor at the University of Maryland School of Medicine, where he plays a leadership role in their Center for Vaccine Development.

My colleagues are all experts in their fields and they share my passion for the prevention of infectious diseases through immunization. Dr. Frieden will start off by addressing vaccination coverage in the



United States and how we're doing in utilizing the various available influenza vaccines. He'll also go into more detail about the benefit of increasing pneumococcal vaccination rates.

Following Dr. Frieden, Dr. Whitley-Williams will talk more about why flu vaccination is an important part of routine childhood immunization and will talk a bit about this year's vaccination options for children here in the United States.

Dr. Chen will then discuss the impact of flu on older adults, why and when is a good time to get vaccinated and the role of two specific vaccines designed to improve flu immunity protection in the 65 and older adult population.

Since the first NFID flu news conference held 20 years ago, we've seen enormous changes in influenza vaccine landscape. Twenty years ago, flu vaccine recommendations were limited to people age 65 and older and certain high risk populations. Now, we know about the enormous flu toll that-- the enormous toll that flu takes on the entire population; young and old alike. So we've recommended it universally every year for everyone age six months and older. We have a plentiful supply, improvements in vaccine development continue, and later you'll hear more about the different options available.

We're at a critical milestone in the fight against influenza, and what we've learned over the past two decades is that, I wish it were true but it's not, there's no magic bullet to get everyone vaccinated and to improve vaccination rates. That said, each of us can and must be part of the solution by working together to continue to increase awareness among the public and healthcare professionals alike, and by getting vaccinated ourselves.

I want to also remind everyone of the CDC's take three approach to flu prevention. In addition to the importance of annual vaccination, recommended steps also include practicing everyday preventive actions to help the spread of flu, keep washing those hands, and the use of antivirals should you get flu. Start early and you'll get the best effect.



Now, following the presentations, there'll be a Q&A session, but now we're going to begin by having Dr. Frieden take the podium and give us our address. Tom?

**DR. TOM FRIEDEN:** Thanks very much, Bill. It's always a pleasure working with Bill Schaffner, one of the great thinkers and voices of public health.

Flu is serious, flu is unpredictable. Flu often gets not enough respect. First off, people sometimes don't understand what flu is. It is not the common cold. A staff member of mine last year got the flu and was severely ill. Young, healthy woman thought she was going to die. She was desperately ill, really scared, sicker than she'd been in her life. That was flu. So flu each year sends hundreds of thousands of people to the hospital. In a bad year, kills up to 49,000 Americans including elderly, people with underlying conditions and infants. Each year we see 100 or more infants or children with flu who die from flu. And when we've analyzed those infants, we've seen that about 90 percent didn't get vaccinated.

I'm going to give you the bottom line up front. If we could increase vaccination coverage in this country by just 5 percent, just 5 percent more, that would prevent about 800,000 illnesses and nearly 10,000 hospitalizations. Flu vaccine is one of the best buys in public health. For employers, it will reduce your absenteeism rate. For families, it'll reduce the likelihood that you have to miss school or work. And for all of us, increasing that rate will keep us healthier and reduce healthcare costs.

Now, flu vaccine has a proven record of success. It's not perfect, we wish it were better, but it will cut your risk of flu, if the match is good, by at least a half and that's far better than anything else you can do to protect yourself against the flu. So although it's not perfect, the flu vaccine is still our best tool to prevent the flu.

Now, we know that flu vaccinations substantially reduces the risk of hospitalization, especially in people over 50, people with lung disease or diabetes or heart disease, that vaccination of pregnant women will reduce the risk of flu illness which can be severe, or even fatal, in pregnant women. And will also reduce the risk that their babies will develop flu.

Despite all those benefits, we're not seeing the kinds of trends we would like with flu vaccination.

Overall, last year we had a moderate season with a late peak. It was H1N1 predominant. There's really good news. For healthcare workers, more than nine out of ten got vaccinated. That's a steady increase. I can remember just a few years ago when that was down around 60 percent. Now, 96 percent of doctors got vaccinated. And why do you think that is? Because we know that it works, that it protects ourselves, our families, our patients. That we don't want to have the flu because flu can be really devastating.

The hospitalization rate is highest in people over 65 and second highest in the boomers, the baby boomers ages 50 to 64. Almost half of people above the age of six months were vaccinated last year, 46 percent. It's a slight decline, but similar to two years ago. Children had the highest rate and if you look at the data, there's been a steady increase in the proportion of kids vaccinated from the low 40s up to 60 percent now. So we're making progress with kids, although it didn't have further progress last year. But still, there are 30 million kids who didn't get vaccinated. This is the group that's most likely not only to get the flu, but to spread it as well.

For older adults, we're concerned. We saw about a 3 percent decrease in flu vaccination rates in both the 50 to 64s and also the 65s and over. We did see record high rates in long-term care workers of 69 percent and that's really important. There's some evidence that suggests that if the vaccination rate is higher in a nursing home, the residents of that nursing home are less likely to die in that flu season. So we're encouraged by that continuing increase in long-term care vaccination.

Now, what's new this season? As you've probably heard, the biggest difference is that the nasal spray is no longer recommended. We don't know why, but the vaccine efficacy data for the last couple of years suggest that it was not protective, and therefore we're not recommending it. It's a really important vaccine. We know there are lots of kids who would much rather have the nasal spray than a shot, and for years my staff have been telling me, "Don't say the flu shot because it's a vaccination, it might be a spray." But this year, I can say flu shot.



As in the past, we have no preference of which type of flu shot to get, but get one of them. We also say get it by the end of October and don't delay. There's some people who say, "Well, if I get it later closer to flu, might that be more protective?" The problem is that a vaccination deferred is often a vaccination forgotten and we want to insure that as many people as possible get the flu vaccination. More good news, there's plenty to go around, although I think if I said there wasn't enough, maybe that would increase vaccination rates.

There are going to be between 157 and 168 million doses, there are already 93 million doses out there. There's plenty for everybody. Get vaccinated now. There's really no excuse not to get vaccinated against the flu. We've simplified the recommendations for people who may have had a reaction to eggs in the past. Talk to your doctor about it. And everyone over the age of six months should get vaccinated.

We have seen already some local outbreaks of flu and we've already tested 5,000 flu viruses and we're using now rapid genomic sequencing to understand more about the viruses. But it's way too early to say whether this year's flu vaccine will match this year's circulating strains. We know it's a very good match for the strains that were circulating at the end of last year, but flu is unpredictable. We anticipate it will be, and we hope it will be a good match, but only time will tell. We will track that very closely, as we have in the past.

I want to also mention the pneumococcal vaccine because this is relatively new. Pneumonia sends a half a million Americans to the hospital or the doctor each year with pneumococcal disease, and causes about 18,000 deaths a year. And we have now two pneumonia vaccines. Everyone over the age of 65 and everyone under 65 with certain chronic health conditions should get a pneumonia vaccine. If you haven't gotten your two vaccines yet, getting them during the time you get the flu vaccine is a great thing to do. Pneumonia and flu, unfortunately, often go together and pneumonia vaccines are really available and important. We have two different types, the conjugated vaccine and the polysaccharide vaccine.



Unfortunately, if you look just at people over the age of 65, four out of ten still haven't been vaccinated against pneumonia. So we have much farther to go in terms of pneumonia vaccination and it's a great idea to get your pneumonia vaccine at the same time you get your flu vaccine.

So, I'll just end with our key three steps and the bottom line again. Bottom line is flu is unpredictable, but vaccination, if we could increase by just 5 percent, would prevent 800,000 illnesses and nearly 10,000 hospitalizations. First, get a flu shot, any flu shot. No excuses not to get them. Everyone over the age of six months.

Second, take everyday preventive actions. If you're sick, stay home. If you sneeze or cough, cover.

Third, if you do get the flu, talk to your doctor about antiviral drugs which may be able to shorten the duration of illness and keep you out of the hospital. Thank you very much. (Applause)

**DR. WILLIAM SCHAFFNER:** Tom, succinct, punchy and good messages, as usual. Thank you very much. Dr. Patricia Whitley-Williams, Pat? You're going to tell us about the importance of flu vaccination for children, right?

**DR. PATRICIA WHITLEY-WILLIAMS:** I certainly am, thank you, Bill. Good morning. I'm pleased to be here to talk to you about why is it important to vaccinate children against flu. We've made a remarkable achievement in the reduction of vaccine preventable diseases in children, especially those illnesses like chicken pox and polio, mumps and tetanus and diphtheria. And truly, this has been one of the greatest public health success stories in our nation's history.

But we've also made great strides in protecting more and more children against the flu. So ten years ago, our vaccination rates in children ages 6 to 23 months was only about 10 percent, or 20 percent. But recently, we know now that the vaccination rate in children ages 6 to 23 months is 75 percent, which is terrific. In fact, that number exceeds the national public health goal of 70 percent. And, in fact, that was the only age group that exceeded that national public health goal. So we are really excited about that.



However, we still have much more work to do because the children, as they get older, the vaccination coverage rates actually starts to decline. So, every child of every age should be vaccinated against flu.

Why is that? You heard a little bit before. Certainly flu can cause serious illness and even death in otherwise healthy children. Yes, the children with chronic illnesses are more at risk. However, healthy children get the flu. On average, about 20,000 children under the age of five are hospitalized for flu-related complications each year in this country. And as a pediatrician and infectious disease consultant, I can tell you I've seen first hand the devastation that influenza and its complications can cause, particularly in pneumonia, in meningitis, in children. And in fact, we have here with us Families Fighting Flu today, and they have had experience first hand. So we're delighted that the joined us.

So vaccination is the first and most important step in protecting children. And again, as a consultant, pediatricians send me their parents who do not want to vaccinate their children against influenza. So we have a serious talk about this. And I ask them, "Why would you want to put your child at risk?" I compare it to the analogy of the seat belt. Certainly, no caring parent would get into a car and drive away without putting their seat belt on and lay their child beside them, correct? They would put that child in an age appropriate car seat to avoid the risk of injury should there be an accident.

So the same thing goes for immunizing children against flu. Immunize your child so you protect your otherwise healthy child from developing a flu-related complication and being hospitalized or even suffering death.

You also heard that there is an important change for the 2016-17 flu season, and that is that the CDC and the American Academy of Pediatrics are recommending flu shots. But I don't want parents who normally opt for their child to receive the nasal spray flu vaccine as a reason to pass on getting their child immunized because each child deserves to be immunized this year and every year. And we've shown that flu shots are proven to be effective and parents need to make sure that they have their children protected.

You also heard mention about pregnant women. And as a pediatrician, I cannot tell you how important that is, particularly by vaccinating pregnant women, we also have an opportunity to protect the newborns and children under six months of age. And there's been a recent study that actually showed that there's a reduced risk of flu illness in children born to women who were vaccinated during that pregnancy against flu compared to those infants that were born to women who were not vaccinated during pregnancy. So we all agree on this, that we really do need to vaccinate our children.

And children, as you heard before, can infect not only their families, their school mates, their nursery enrollees as well, but also grandparents that may be at home and at higher risk for flu.

So in closing, I'd like to say everyone should get vaccinated. As pediatricians, we say vaccinate, vaccinate, vaccinated, vaccinate. It's good for you, it's good for your children, it's good for your family and it's good for all of us. Thank you. (Applause)

**DR. WILLIAM SCHAFFNER:** Pat, thank you very much. When in doubt, vaccinate. Dr. Chen, Dr. Wilbur Chen is going to now emphasize the importance of immunization of persons who have graduated from pediatrics.

**DR. WILBUR CHEN:** Exactly. Thank you, Bill. So I'm an infectious disease doc for adults and my career interest, one of them, is to improve vaccines for older adults. So, let me tell you a little bit about what's happening globally. So the world population is continuing to grow older. We see longer, healthier life spans and also an aging baby boomer-- let me say again-- baby boomer population. And that all contributes to this rapid rise in older adults in the U. S.

So some statistics. In 2030, just less than 15 years from now, about 20 percent of the U. S. population will be older adults, those 65 and over. By 2040, we will have double the number of older adults than we had in 2014, just six (sic) years ago. So those are just some statistics. And globally, this is a phenomenon such that in just four (sic) years, in 2030, the number of people who are 60 years and older

will outnumber the number of children five years and younger. So it gives you an idea that the older population is a very important segment of our global population, not just here in the U. S.

The elderly are a special population to me as an infectious disease doctor because of something called immune senescence. And so even as we age chronologically, it also means that our immune systems age as well. And a consequence of that is that we, perhaps, have higher rates of infection as we get older. We have more severe infections when we do get infections. And the response to vaccination is lower. So this is the kind of hurdle that we have as we approach older ages.

Now, let me also say that when I say elderly, we arbitrarily define this as 65 years of age and older. But certainly, there are people who are healthy in their age and a 65 year old can be very healthy. So it's not really to make a comparison to those who are 45 years. But I will say immunologically that you have hit your immunologic peak when you reach 45 years of age, and thereon your immune system does start to decline. So, sorry Bill, if you're older than 45, Tom, Pat, you know, we've all hit our peaks at this time.

So that's just setting the stage. So what is the message today because of the global elderly population that is increasingly important? Well, the recommendation across the board has been for influenza vaccination every year for those age 65 and over. In fact, I had to look back and it's been at least since 1960 when Surgeon General Leroy Bernie declared that everyone age 65 and over should get annual influenza vaccinations. So this has been more than 50 years that this recommendation has been in place.

I should also say that the impact of flu every year hits the elderly the hardest. Seventy to 90 percent of influenza deaths that occur every year occur in the population of 65 years and older. For hospitalizations, 50 to 70 percent of hospitalizations due to flu occur in the 65 and over population. So the older adult population is an important population for us to target for not just influenza, but as Tom said for pneumococcal vaccination. So as soon as you reach the age of 65, you should be seeking out pneumococcal vaccination as well.

And in addition to that, a year later you should be seeking your second dose of pneumococcal vaccination.

So, right now the statistic, as Tom mentioned, is that approximately one in three older adults do not get vaccinated. Some reason might be because of a missed opportunity from the healthcare provider or the healthcare system. So that's shame on us, perhaps. But it also could be maybe an unwillingness or a lack of willingness to receive vaccinations. So it could be that reason as well. There could be other reasons, but again, one in three is terrible. We can do a lot better.

So to kick off this flu season, let me just say a few things. So influenza vaccination is safe. We've given flu vaccines to millions of people throughout the years, throughout at least 50 years now this recommendation has been in place. All the injectable vaccines that are given for older adults are killed vaccines purified so that you cannot get flu from these vaccines. It's not possible.

It is possible for you to get an adverse reaction, but it is really just mild injection site reactions and maybe some pain, swelling and some muscle tenderness that really is very mild and lasts for a couple of days. But that's really the extent of it, so it's an extremely safe vaccine.

As far as efficacy, it's the best we have. I think Tom already mentioned we could do better with these vaccines, but again, the important message is that everyone should get vaccinated. A vaccine that is at least partially protective is better than no vaccination at all.

Vaccination can prevent not just influenza illness, but also hospitalizations and death and complications. So, you know, it's interesting that influenza vaccination also has been shown to decrease heart attacks, strokes, and other comorbid conditions from flaring up and this can all be attributable to flu vaccination.

In fact, for the elderly adult, functional independence is a very important factor. And so functional independence has also shown to be protective with influenza vaccination. So I think that I just want to emphasize that the efficacy of these vaccines has been proven.

This year, we have a lot of choices. We didn't maybe highlight this, but I'd like to say that we have two new flu vaccines that are now FDA approved and available. We have quadrivalent vaccines now, and we also have, for the elderly, an adjuvanted vaccine. And so these are additional vaccines in our armamentarium. We'd like to see uptake of these. One of them, the adjuvanted vaccine is specifically for the elderly so we'd like to see how this continues to perform. And we do know that, at least in small clinical studies, that it does seem to be very efficacious. And, in fact, looked-- appeared in one of the clinical trials to be superior. There are a few that are performed in Europe as well where it looked like it performed better than the standard dose vaccine. So again, I think that we're very excited in the flu world that we have additional vaccines; the high dose vaccine and the adjuvanted vaccine for the elderly in specific.

So, at this point, I don't want to say that I have a preference, but I do want to say that getting flu vaccination is very important. Timing of vaccination comes up sometimes in some people's minds. The recommendation is that people should try to get vaccinated as soon as possible and we try to say by the end of October. That doesn't mean the end of October get vaccinated, but by the end of October. Again, it's because flu season is really unpredictable. We don't know if it'll be an early season rather than a later season. And so if you were to get vaccinated earlier on and preferably by the end of October that you complete this, then that would be the best situation.

So, let me just make my conclusions again. The elderly, at highest risk for influenza. Rates for influenza vaccination are relatively low for the elderly population that are at the highest risk, so we need to do better with that. Vaccines are efficacious and they can improve not just from influenza but also other comorbid conditions like heart attack and stroke.

And as Pat mentioned, it's important for us to look at other parts of the population surrounding the elderly. So that would include children, and so we would like to have people surrounding the elderly also get vaccinated as well. That includes healthcare workers. And all of this is really meant to



emphasize that we would like to encourage healthy aging here in the U. S. and also globally. Thanks.

(Applause)

**DR. WILLIAM SCHAFFNER:** Thank you, Wilbur, and thank you everyone for those nice presentations. And now, Dr. Frieden will be the first to lead by example by getting his flu vaccine today, right now.

**DR. TOM FRIEDEN:** Before questions, huh?

**DR. WILLIAM SCHAFFNER:** Yes, before questions. (Laughter)

**DR. TOM FRIEDEN:** It's a long way to travel for a flu shot.

**DR. WILLIAM SCHAFFNER:** But it's a good flu shot.

**DR. TOM FRIEDEN:** It is.

**DR. WILLIAM SCHAFFNER:** Right, and you'll show everyone else. So Sharon Walsh-Bonadies from the Medstar Visiting Nurse Association is now going to vaccinate Dr. Frieden, as she does each and every year, and we can all smile as he smiles getting his vaccine. Dr. Frieden is a good sport. He does this each and every year, and we're thankful for that, and he certainly does lead by example. And as you all know, we'll all have the opportunity to be vaccinated at the end of this.

**DR. TOM FRIEDEN:** Getting vaccinated at your workplace is really convenient and this happens to be my workplace. I didn't even feel it, truthfully. Painless Nurse Sharon.

**SHARON WALSH BONADIES:** And you're good.



**DR. WILLIAM SCHAFFNER:** Thank you, Tom. And I always get my influenza vaccine here and it's true, they're painless, all of them. So, thank you for the Medstar Visiting Nurse Association for administering the influenza vaccine, which will happen a little bit later.

Now, we'll do the Q&A. You're up for it, right Tom?

**DR. TOM FRIEDEN:** Yes.

**DR. WILLIAM SCHAFFNER:** Yes, you've recovered. (Laughter) The Q&A portion of the event is reserved for questions from the media, and we have roving microphones here in the room. Please indicate if you have a question and one of our staff will come over to give you the mic. Please remember to identify yourself and the media outlet you represent. For media participating via the webcast, please email your questions as indicated on the webcast. If you're on the teleconference, the operator will come on the line momentarily to advise you how to submit your questions.

And finally, if any of you would like to have a one on one interview with any of the panelists or representatives of their supporting organizations present, one of our staff here can arrange that for you later. So, we're open for the Q&A, please. Do we have some questions? We have one, thank you.

**DR. TOM FRIEDEN:** Or several.

**DR. WILLIAM SCHAFFNER:** So Ben Schmidt of the *Pittsburgh Tribune* is following up on something you said, Tom. You said it's too early to yet tell about the strain of the vaccine-- excuse me, the strain of the virus that's going to be prevalent this year, will it be mild or severe. But Ben is persistent in asking. We'll have to wait and see, won't we?

**DR. TOM FRIEDEN:** Yeah. What we do is we work closely with doctors and health systems, nurses, around the country to track flu. You can check that at Flu View at CDC. Every week, we update it. But flu is unpredictable. We know there'll be a season, but when it is and which vaccines-- which flu strain

predominates, only time will tell. The safest thing you can do is to get vaccinated. And this vaccine does match the flu strains we've seen so far but it's still too early to predict what the rest of the season would hold.

It's not too early to predict that the best way to protect yourself is by getting this, any of these, flu shots.

**DR. WILLIAM SCHAFFNER:** Thank you, thanks Tom. So the next question comes from Arthur Allen of Politico. Wilbur, I wonder if you could comment on the evidence that repeated annual flu vaccination may lower the effectiveness of any new vaccination you get in any particular group?

**DR. WILBUR CHEN:** Yeah. So that's a very good question. I think that this question is referring to our Canadian colleagues who have published that with repeated seasonal vaccination that there-- looked like that there was a statistically significant decrease in the vaccine efficacy compared to those who are not vaccinated every season. This has not been replicated, as I understand, by the CDC in the U. S. So this is an observation that has been seen.

We don't know what to think about it. It is statistically significant, but I don't think that it detracts away from our message that everyone should get vaccinated. So I think that on the other hand, we have vaccination rates that are not very high, at least in the elderly. We have vaccination rates where one in three are not getting vaccinated, so we can do better.

I think it's a very interesting scientific question and people are exploring it. I'm not sure if there's a biological mechanism that we've been able to have that solidly explains this phenomenon. And again, it hasn't been replicated at this point. In fact, you know, Dan and I were discussing this this morning, I don't know if you wanted to mention anything else, but-- no? but I think that that's where it stands right now. So it is a little bit controversial. It is something that people are trying to address.

**DR. WILLIAM SCHAFFNER:** Sure. We should all get vaccinated. I wonder if you'd give the microphone to Kevin, we'll get to him in a moment. But there's a question on the phone.

**OPERATOR:** So our first question over the phone is from Christine Birak with the CBC.

**CHRISTINE BIRAK:** Hi there. Thanks for taking my question. I'm with Canadian Broadcasting in Toronto. I know you guys have talked about the flu mist. The health authorities in Canada are still recommending use for children the nasal mist. What do you make of their recommendation?

**DR. TOM FRIEDEN:** Each country has to make its own recommendation. In the U. S., we have a very open, transparent process through the advisory committee on immunization practices. And what that committee looked at was the data from the U. S., and elsewhere, of vaccine efficacy against using the LAIV vaccine. And we found that there was no convincing evidence of efficacy.

In contrast, the flu shots did have evidence of efficacy. So we feel that our responsibility in public health is to provide full information and to make recommendations based on information that's openly and objectively derived. It's a surprising finding, and we really do hope that we can get an effective intranasal vaccine, or nasal spray, back on the market and back available and recommended as soon as possible.

**DR. WILLIAM SCHAFFNER:** My grandchildren would support that, yes. (Laughter) Kevin, I have a question for you. Why don't you stand up for a moment, and Dr. Kevin Ault on the American College of Obstetricians and Gynecologists, say a few words about the importance of vaccinating women who are pregnant.

**DR. KEVIN AULT:** I think all of you hit on that to some extent. So the pregnant women are about six times more likely to die from influenza when they're pregnant, and we know that from the 2009 pandemic, that publication actually came from the CDC. There's a vulnerable window for newborns before six months where they can't be vaccinated and there's several good studies that have shown that vaccinating pregnant women makes those infants less vulnerable to influenza.



And even Dr. Chen, I think, hit on it a little bit because he mentioned comorbidities. There's emerging research that women are protected against pre-term delivery, which is one of the most important problems in obstetrics, if they get the flu vaccine while they're pregnant and there's an especially bad flu season. So I think there's benefits for the mother, there's benefits to the pregnancy and there's benefits to the newborns and that's what I usually tell my patients.

**DR. WILLIAM SCHAFFNER:** Thank you, Kevin. We have another question coming from the telephone line.

**OPERATOR:** Yes, our next question comes from Dennis Thompson with HealthDay. Please proceed.

**DENNIS THOMPSON:** Yes, regarding the fact that flu vaccination coverage declined last year, does the fact that fewer people got the flu vaccine last year mean that more people are vulnerable to this year? Is there any coverage that sort of overlaps from year to year or just start fresh every year with a new vaccine?

**DR. TOM FRIEDEN:** I think the bottom line is it does start afresh. You need this year's flu shot to protect you against this year's flu. Last year, we had been very up front saying that the match wasn't the ideal emphasizing the need to take medications if you got sick. And I think maybe that was something that contributed to people being less interested in the flu vaccine last year. But we need to increase that. Again, a 5 percent increase would prevent 800,000 illnesses and nearly 10,000 hospitalizations.

**DR. WILLIAM SCHAFFNER:** So each year, we ought to make influenza vaccination part of what we do in the fall for ourselves and every member of our family. Don't think about it, just do it. Do we have another question on the phone?

**OPERATOR:** Our next question comes from Dawn Rhodes with *Chicago Tribune*. Please proceed with your question.

**DAWN RHODES:** Good morning, thank you so much for taking my question. I would like to know-- I was wondering if Dr. Frieden could talk a little bit about what the process was after ACIP determined there was so little efficiency with Flumist. How did you work with medical providers and hospitals to stock up on injected vaccines? If you could talk a little bit about that process?

And I'd also like to know how many, roughly how many, people got vaccinated via Flumist last year?

**DR. TOM FRIEDEN:** So, we have worked closely with manufacturers, healthcare systems, pharmacies and others. So as soon as it became apparent that LAIV would not be recommended, the other manufacturers increased their production and increased distribution. So, with the availability of up to 168 million doses this year, we don't think there'll be any shortage. Already 93 million have been distributed. I don't know offhand, Dan do you know how many people got LAIV last year? Approximately 20 million. So, this is a significant number and for a lot of kids, it's certainly preferable to getting a shot. So we hope that this option will be available as soon as possible in the future.

But the industry was able to adapt rapidly, providers to adapt rapidly so that providers now have a full range of flu shots available and encourage people to get one.

**DR. WILLIAM SCHAFFNER:** And moms can remember their children have all received shots before, immunizations, right, Pat?

**DR. PATRICIA WHITLEY-WILLIAMS:** Correct.

**DR. WILLIAM SCHAFFNER:** That's not an excuse not to get the flu shot this year. So we have a question from the audience, please?

**RYAN BASEN:** Yeah, Ryan Basen, Medpage Today. I was wondering if you could explain a little bit more the thinking behind the change with nasal spray?

**DR. TOM FRIEDEN:** So with the nasal spray, and Bill, you may want to say more, but the initial data from a randomized controlled trial suggested that it was highly effective and even maybe more effective. However, in the last couple of seasons, we do real world experience, what's called vaccine efficacy studies, or VE studies. And those vaccine efficacy studies indicated that there was no efficacy of the LAIV. That's puzzling. We don't know why that happened. There are a few theories about it, but the bottom line is that for now, it's not recommended and for as soon as possible, we hope to get it back on the market and recommended.

**DR. WILLIAM SCHAFFNER:** So we have another caller with a question.

**OPERATOR:** Yes, our next question comes from Robert Lowes with Medscape Medical News. Please proceed with your question.

**ROBERT LOWES:** Yes, you said that, Dr. Frieden, I think you said that 20 million people got the nasal spray. How many people last flu season were vaccinated? I just wanted to see the percentage.

**DR. TOM FRIEDEN:** I think it would be best if we get you the exact numbers later. It's roughly 140 million, but we'd like to get-- it's 45.6 percent, I think, overall and doing math quickly, it's somewhere around that.

**DR. WILLIAM SCHAFFNER:** Yes, and as Dr. Whitley-Williams said, it was about 75 percent of young children. That diminishes with age. And of the individuals who are age 65 and older, it was right in the kind of mid-60s. It goes up and down a little bit. That's a source of great frustration to me. It's actually a source of great pleasure in the sense that we vaccinate two-thirds of people age 65 and older each year in the United States. But what about that other third? I recognize that 75 is the new 55, but all those people really should be vaccinated.

We have another question here from Helen Branswell from STAT. "Today, the World Health Organization released recommendations for the 2017 southern hemisphere vaccine. The strain selection

committee recommended changing the H1N1 strain. Does that mean that the current H1N1 strain that's in our northern hemisphere vaccine is out of date?"

**DR. TOM FRIEDEN:** No, it does not.

**DR. WILLIAM SCHAFFNER:** No, it does not. It means that we're staying up to date, twice a year.

**DR. TOM FRIEDEN:** And I'll ask Dr. Dan Jernigan to speak further about this. But the bottom line is we've been using the same H1N1 strain since the pandemic emerged, I believe. And so this is a way of updating it. But our current strain works well, even against the slightly changed or drifted, slightly drifted, H1N1 variants we're seeing. But this is just a way of updating that vaccine strain. Dan?

**DR. DAN JERNIGAN:** Yes, we've been following this particular virus for a while now, since 2009, looking to see if it is drifting. And so with the traditional tests, actually, it has not drifted that much. But with some newer testing that we're doing with human serology, we actually are finding some age groups that may benefit from an update in the vaccine. And so this was a reason that allowed them to update this component of the vaccine.

Just for your number, it's 144 million that were vaccinated.

**DR. TOM FRIEDEN:** Great.

**DR. WILLIAM SCHAFFNER:** So, I mean, this process that the World Health Organization goes through is a testimony to the constant surveillance of influenza viruses that go on around the world and are coordinated by the World Health Organization. And that then are reflected, those changes in the viruses, with changes in vaccine composition. And we try to keep up with these wily viruses and make the vaccine the best possible that we can, both for the northern hemisphere and for the southern hemisphere. In this we're in partnership with all the vaccine manufacturers which also must keep up with all that. So this is a very elaborate enterprise designed to provide the best possible protection at all times

against this constant outbreak of influenza annually in the northern hemisphere and then in the southern hemisphere.

If you would give the microphone to Dr. Wendy Sue Swanson from the American Academy of Pediatrics, Wendy Sue, say a few words about, again, the importance of all children being vaccinated. And perhaps you have a message along those lines? You always have a good message.

**DR. WENDY SUE SWANSON:** Yeah, thanks. Well so, you know, I speak to you as a pediatrician and I represent over 60,000 of us who spend every day in the office talking with families, concerns, and the opportunities about flu vaccine. And as the panel so beautifully articulated, parents really trust flu vacs. I mean, they trust the flu shot. Over 75 percent of infants and toddlers get their shots. Over 60 percent of those who go to preschool because kids exchange a lot of snot and coughs. These are the people who get the flu and we know that kids under five are more vulnerable. And we want pregnant moms to be vaccinated.

But, you know, bottom line this year is we know because of transparent data, because of what Dr. Frieden outlined, that we have a good opportunity to protect kids against these illnesses and from spreading it to you on the airplane. So, you know, over 60 percent of those who were vaccinated last year with the shot were protected against flu.

So I'm a mom of two. We'll go as a family. I'll get my flu shot today on camera and then we'll go this weekend before Halloween and get those flu vaccines. But parents trust the flu vaccine. You know, take this phone when you get the flu shot. Get yourself a selfie, put it on Facebook, put it on Twitter. I'll be doing that; the American Academy of Pediatrics will be doing that.

Let's remind the public how much trust we have in this vaccine and how much of a great shot we have at reducing infections. Kids will wash their hands, they won't always cough in the corner of their elbow like we want them to, and they will spread it around this country. And those who are vulnerable, you know, those whose immune systems aren't totally mature, those under age five.



And to the point of Dr. Chen, those whose immune systems are fading out, those grandparents need to be vaccinated around those kids, too. But those kids need to be vaccinated around those gorgeous grandparents. So we've got a great opportunity, and if we can help as a community, it's mom to mom, dad to dad, pediatrician to mom and dad, where we really develop trust and understanding of this great opportunity.

**DR. WILLIAM SCHAFFNER:** Thanks. Just to emphasize, kids are the great distributors of the influenza virus, so those of us-- nobody wants to be a transmitter, but we certainly won't want those children to kind of be distributing the virus amongst themselves and give it to those of us who are a little older and apparently not quite as ready to respond to the vaccine. So it's important to get those children immunized.

So Marla Weston from the American Nurse Association, I wonder if she would like to say a few words? Is she here?

**RUTH FRANCIS:** Good morning, everyone. I'm Ruth Francis from the American Nurse's Association, not Marla today.

**DR. WILLIAM SCHAFFNER:** Ruth Francis is here today.

**RUTH FRANCIS:** So, nurses have a great opportunity also because they interact so much with other families and so we ask nurses to lead by example by having the flu shot themselves. But also to be sure that at every opportunity, whether they're in a home based situation or in a community situation, in a hospital or in a doctor's office, that they talk to families about having the flu shot, and make sure that everyone has the flu shot.



So just as you heard all the speakers today, take every time, every opportunity to do that, to make sure that not only we are protecting ourselves, we're protecting our families, protecting our coworkers, but also protecting the community at large.

**DR. WILLIAM SCHAFFNER:** Thank you very much, Ruth. Further questions from the audience? Yes, please?

**KIMBERLY LEONARD:** Hi, Kimberly Leonard with *U. S. News & World Report*. I have a couple of questions. Remind me again how many strains of the flu are prevented with this vaccine. And are there any we would be able to identify for our readers other than H1N1, like is bird flu one of them? And then also do we know what percentage of children who were vaccinated received the nasal spray last year?

**DR. WILLIAM SCHAFFNER:** So Tom, do you want to take the first part, and then Pat, perhaps you could talk to that?

**DR. TOM FRIEDEN:** So, there are vaccines that have three strains and vaccines that have four strains. You've got a choice this year. None of them have bird flu in them. They're all flu A and flu B. You can have two from column A and one from column B, or two from column A and two from column B. Those are your choices among the different flu shots. And we recommend you discuss with your doctor and choose one of them, any one of them.

**DR. WILLIAM SCHAFFNER:** And absolutely get the one that's available, right, immediately. Pat, what was your second question again, Kimberly?

**DR. PATRICIA WHITLEY-WILLIAMS:** The percentage.

**KIMBERLY LEONARD:** The percentage who received the nasal.



**DR. PATRICIA WHITLEY-WILLIAMS:** Yeah. I don't know exactly the number or the percentage of children who received the live attenuated. However, the contraindications were in children who had asthma, were not eligible to receive that vaccine. Also, children under two. So the inactivated vaccine, the flu shot, was used probably in the majority of children, but I do not have that exact number. We don't have that--?

**DR. WENDY SUE SWANSON:** As I understand the data from last year, it wasn't the majority of children, it was just about a third of children who got the nasal flu spray. So you'd be surprised how many kids will choose a shot over a squirt in the nose. And that's something to remember. I mean, to the point of the panelists, kids are good at getting shots, they're used to it. We get them every couple months in infancy and certainly parents can do it together and build trust that way.

So last year, as I understand it, it was just about a third of children who received flu vaccine got it from the nasal spray. So the majority got the shot.

**DR. TOM FRIEDEN:** And the shot doesn't hurt, I can verify that. (Laughter)

**DR. WENDY SUE SWANSON:** It's okay if it does, though.

**DR. TOM FRIEDEN:** Okay, didn't hurt me.

**DR. WILLIAM SCHAFFNER:** You're a tough guy like my grandson. That's all right, it's the anticipation, isn't it, more than the reality.

**DR. TOM FRIEDEN:** That's right.

**DR. WILLIAM SCHAFFNER:** Further questions? On the phone, none on the phone, none in the room. I want to make sure that there's not a question on the phone? No. So, thank you, everyone, for your participation and your close attention. I'd like to thank you all for joining us.



As we do every year, let's hope for an uneventful, as much as possible, flu season. But as we've heard from the panel and everyone else, our best defense is a good offense. Get vaccinated. We encourage everyone to participate in an NFID, CDC and ABC News Twitter chat on influenza prevention and treatment on October 18<sup>th</sup> at one p.m. eastern time, and we hope you'll join us.

A word of thanks to our funders who have supported this news conference. And then if you'll all please wait until the panelists have all received their vaccines before lining up for the on-site clinic at the back of the room. I used to quip that you can't leave the room without being vaccinated. We don't enforce that rigorously, but we certainly do encourage vaccination.

A video of today's news conference along with other supporting materials will be available on the NFID website at [www.NFID.org](http://www.NFID.org) very shortly. Thank you very much for your participation and all you do to get this important message out to the population of the United States. We appreciate your efforts, thank you. [Applause]

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