

We're Drs. Chris Carroll, pediatric critical care physician, and Jayshil Patel, pulmonary intensivist, and we're here to discuss all things flu. AMA!

Flu_{Doctors}¹ and r/ScienceAMAs¹

¹Affiliation not available

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Abstract

Hi all! My name is Dr. Christopher Carroll. I am a pediatric critical care physician at Connecticut Children's Medical Center, a Professor of Pediatrics at the University of Connecticut, and I serve on numerous committees within the American College of Chest Physicians including as trustee of the CHEST Foundation, chair of the Scientific Presentations and Awards Committee, past-chair of the Pediatric NetWork and steering committee of the Critical Care NetWork. Most of research has focused on the treatment of severe respiratory diseases in children (particularly acute asthma and bronchiolitis) and the influence of genetics on respiratory diseases in critically ill children. My name is Dr. Jayshil Patel, and I currently administer to patients, teach and conduct research as an academic intensivist for the Pulmonary and Critical Care Division at the Medical College of Wisconsin. I received training in internal medicine at the Cook County Health and Hospital System in Chicago followed by subspecialty training in pulmonary and critical care medicine at the Medical College of Wisconsin. The majority of my career has centered around a mixture of enhancing patient care, providing education and mentorship to house staff and medical students and advancing science through research, in which I primarily study the impact of enteral nutrition on critical care patient outcomes. Influenza, most commonly known as the flu, is a contagious respiratory illness caused by influenza viruses. The flu can cause mild to severe illness and at times can lead to death. Anyone can get the flu, and serious problems related to the flu can happen at any age but may have a higher risk of occurring in young children and patients 65+. We are in the heart of a particularly severe flu season and it's important to understand the causes, symptoms and ways to treat and prevent the flu. Since the flu and the common cold are both respiratory illnesses that share very similar symptoms, it can become very tough to differentiate one from the other. We're here to provide the facts, share the latest in research and help provide more information on how to best tackle this flu season. Just a note, we won't be able to give specific medical advice or a diagnosis on this Reddit AMA. Conflict of Interest Disclosure: Our thoughts and opinions are our own. We will be back at 1 p.m. CT to answer your questions; ask us anything!

[REDDIT](#)

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FLU_DOCTORS [R/SCIENCE](#)

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Can you give any estimates what the chances are of actually getting the flu after being exposed to the virus? Let's say a regular healthy man or woman between 30-40 years old.

To follow up, let's say you are exposed to the virus by a certain person but your immune system fights it off and you don't get the flu. Is it then still possible to get infected by the same person a few days or a week later?

[stroudmears](#)

(Dr. Jay Patel) - Thank you for these questions. The chances of getting the flu after being exposed probably depends on a combination of the number of droplets (i.e, coughing respiratory secretions directly onto your nose and/or mouth) and individual risk factors for acquisition. For example, a healthy 30-year old individual might not be as susceptible as compared to a 70 year individual with multiple

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medical problems.

To answer your follow-up question, it is not possible to get infected by the same person unless they have a different Influenza strain.

Hope this helps.

Given that it's highly difficult for the average person to differentiate between the flu and the common cold, why is it beneficial for the public to be educated about the flu?

[Purplekeyboard](#)

(Dr Chris Carroll) This is a great question, Purplekeyboard. Thanks for setting me up! The Flu is potentially much more dangerous and more likely to be life-threatening than the Common Cold. Flu is more likely to have an abrupt (or rapid) onset than the Common Cold, and more likely to be associated with secondary bacterial infections (which can lead to things like sepsis). So I think it is important for the public to be educated about these dangers. Here's a link from the CDC about differentiating the Flu and the Common Cold. <https://www.cdc.gov/flu/about/qa/coldflu.htm>

My wife and I are expecting our first child any day now. Are there particular precautions you'd recommend for a newborn in this flu season? The advice we've received is, initially, to limit who can be present around the baby — certainly no one with flu symptoms — and to make any visitors wash their hands.

[paralysisviaanalysis](#)

(Dr. Chris Carroll) Congratulations! These are excellent precautions! One of the best ways to prevent your child from getting the Flu (or really any respiratory disease), is to do just what you are doing: limit visitors, wash your hands, and keep the baby away from anyone who is sick. Nothing is 100%, but this is a very good start. For newborns, RSV is probably a bigger risk than Flu, but the precautions are the same. Here's a blog I wrote on RSV/Bronchiolitis that might be helpful. And again, congratulations to you both! <https://www.connecticutchildrens.org/blog/want-hear-bronchiolitis-speech/>

Online articles are saying that this years strain maybe airborne vs typical droplet. Is this a mutation? Can we expect to see this from now on with future strains?

[Dr3ux](#)

(Dr. Chris Carroll) Hi, Dr3ux! Thanks for all your answers today. I get this question a lot. Although, the Flu is spread by droplets (made when people cough, sneeze or talk within 6 feet of you), these droplets can land in the mouths or noses of people who are nearby and possibly be inhaled into the lung (thereby infecting you!). I think that is where the confusion lies between contact vs. droplet spread.

Thanks for the AMA, I have two questions

1. Why is the flu vaccination rate so low and what can be done to increase it?

1. Why was the 2017 flu vaccine so ineffective in providing protection against the flu and what's being done to improve it this year?

Background info:

In one study of the 2017 flu season a paltry 27% of Australians were vaccinated (73% weren't), including just 6% of children. Among those vaccinated, 33% were effectively protected, though rates differed between the strains. The vaccine was 5-19% effective at protecting against H3N2 and 37% effective at protecting against H1N1 or flu B infections.(1)

(1) <http://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2017.22.43.17-00707#r10>

Azygousvein

(Dr. Chris Carroll) Great question! I think one of the barriers is that we all have to get a shot every year rather than one that lasts for years at a time. There are two reasons for this.

First is that a person's immune protection from vaccination declines over time, unlike some vaccines that grant lifelong immunity. So an annual vaccination is needed to get the "optimal" or best protection against the flu.

Second is that the flu virus is constantly changing and adapting. We fight off infections by building antibodies to the surface proteins on the flu virus. But there are lots of types of these surface proteins. You've may have heard of the H1N1 virus from 2009. That nomenclature refers to the two proteins on the surface of the virus: the hemagglutinin (H) and the neuraminidase (N). There are 18 different hemagglutinin subtypes and 11 different neuraminidase subtypes and these can combine in new and different ways. And flu doesn't just affect people, it infects birds and pigs. As the flu virus cycles through different species around the world, it changes. Scientists in the US who create the flu vaccine look at the trends of influenza infections around that are causing the infection, and try to predict which strains will infect people in the US the following year. Sometimes they get it right, sometimes they miss.

We were involved in a study in kids published in 2014 that showed that flu vaccine reduced children's risk of flu-related pediatric intensive care unit (PICU) admission by 74% during flu seasons from 2010-2012.

And a 2016 study found that people 50 years and older who got a flu vaccine reduced their risk of getting hospitalized from flu by 57%.

Also, as others have mentioned, many people may think they have the Flu when in fact they have the Common Cold. This might keep them from getting vaccinated in the future thinking "it didn't work". Flu vaccines do NOT protect against infection and illness caused by other viruses that can also cause flu-like symptoms. There are many other viruses besides flu viruses that can result in flu-like illness that spread during the flu season. These non-flu viruses include rhinovirus (one cause of the "common cold") and respiratory syncytial virus (RSV), which is the most common cause of severe respiratory illness in young children, as well as a leading cause of death from respiratory illness in those aged 65 years and older.

Hope this long response helped and thanks for giving me a set up for a long answer!

I swear on my cat and my mother's life: the last 2 years I got a flu shot, I got sick the next day. Malaise, body aches, fatigue.

Everyone tells me it's impossible to get sick from the vaccine. Is it just coincidence? Could it be I just was around more sick people since I was at my doctor's each time?

BabylonLiaison

(Dr. Jay Patel): This is unfortunately a common concern that prevents many individuals from subsequently getting vaccinated. Dr3ux is correct in that the symptoms you had post-vaccination are merely the "body's response," as opposed to actual Influenza acquisition. The vaccination is not a live

vaccination - meaning you are not being injected with the active virus itself. Hope this helps.

I developed the flu in December and then several days later strep throat. I've heard of this happening to others as well. Is there a higher incidence of these two co-occurring in this year's outbreak? If so, why? Thank you.

[talking_leaves](#)

(Dr. Jay Patel) Thank you for this question. Influenza is a virus and the symptoms of muscle aches, fever, and headache are prototypical signs of the flu. However, bacterial infection of the lower respiratory tract (also known as bacterial pneumonia) is a major complication following Influenza. The most common bacterial organisms are Streptococcus and Staphylococcus. It turns out that Streptococcus not only causes pneumonia, but can also cause "pharyngitis," or "infection of the back of your throat" leading to your sore throat.

Streptococcal related sore throat is not a common complication after "the flu." Therefore, I am not sure if there's a true relationship between the two or simply a coincidence. Perhaps we'll learn more after we have information from all of this year's cases.

Thank you for doing this AMA and for your work . I have two questions: 1) They say that those who have been vaccinated and still catch the flu have less severe symptoms. In this case does the illness tend to follow any pattern (i.e more muscle aches and chills, fewer respiratory symptoms etc.) ?

2) I could possibly have CVID (Low levels of igh2 ,working closely with my ENT) and live with a bull headed anti vaxxer. What arguments or analogies would you suggest I use to try to convince her she could be my Typhoid Mary?

[elusivemoniker](#)

(Dr. Chris Carroll) Thank you, elusivemoniker!

1) People vaccinated for the Flu are more likely to have less severe illnesses or hospitalizations. We were involved in a study in kids published in 2014 that showed that flu vaccine reduced children's risk of flu-related pediatric intensive care unit (PICU) admission by 74% during flu seasons from 2010-2012. And a 2016 study found that people 50 years and older who got a flu vaccine reduced their risk of getting hospitalized from flu by 57%.

2) Glad you are working with your ENT! This is a tough position to be in. Although I work in the ICU, I was first a pediatrician, so I have great sympathy for trying to get people to vaccinate. In the end, she's helping you by protecting you from getting infected, and keeping you well and around! But I've also been married for 20+ years, so I know that may or may not be a good argument. Good luck to you and take care!

I have COPD. I have gotten my flu shot. I am proactive; washing my hands frequently, keeping my hands away from my face, avoiding crowds when not necessary, exercising common sense. But I cannot live in a bubble. What are the very early signs that I might be infected and need to reach out to my PCP or pulmonologist?

[ddaro](#)

(Dr. Jay Patel). Thank you for your question. Influenza characteristically begins with an abrupt onset of muscle aches, fever, headache, and weakness. The symptoms may also be accompanied by sore

throat and runny nose. Since COPD also involves the respiratory tract, new breathing problems, cough, or phlegm (pronounced "flem") production may also be a "response" to an infection (such as the flu!).

Under what conditions should you get medical treatment?

[PastTense1](#)

(Dr. Jay Patel) This is a good question. The answer here depends on tolerability of symptoms and risk factors of complications, such as pneumonia. Remember that the flu prototypically presents with muscle aches, headache, fever, and may be accompanied by a sore throat and runny nose. These symptoms are typically self-limited and last less than one week.

Symptoms that may not be as well tolerated include shortness of breath, dizziness (perhaps from dehydration), confusion, and/or high fever.

When symptoms are not tolerated or you have risk factors for developing complications (such as age greater than 65, your immune system is suppressed from a disease or medications such as steroids), you may want to seek medical care.

Hope this helps!

This year's flu season has been extremely hyped up by the media—just this morning *WaPo* [posted a story](#) about how it is "on pace to be the worst ever." However, NIAID Director Anthony Fauci, MD, and Richard Webby, PhD, of St. Jude's have both [said that this is nothing out of the ordinary](#).

How would you gauge this year's season? Is it worth the hype that it is getting in the media?

[William_Shakes_Beard](#)

(Dr. Chris Carroll) Hi, William_Shakes_Beard. I know that media hype is a thing in general. And I know I give a Flu talk (or Blog, or Facebook Live, etc) every year. But I do think that the Flu is bad this year. Is it worse than 2009-2010? I don't know, we'll have to wait to see.

What is different this year, is not just the Flu, but an overload of respiratory viral infections that are overwhelming hospitals around the country. I've talked to friends working in California who are putting up tents to house patients, and others from the East Coast to Anchorage who are boarding many patients in the Emergency Departments because the hospitals have run of beds. So this scope is new this year. Is it all Flu? No. But we can vaccinate against Flu, so it gives us a way to help.

When is the flu season going to be over? My house just can't take it anymore.

[dreacam3](#)

(Dr. Chris Carroll) Flu activity often begins as early as October and November and can continue to occur as late as May. Flu activity most commonly peaks in the United States between December and February. So hopefully we will be through the worst of it soon! There is still time to get your Flu vaccine though!

What are the different therapeutic options for the flu? And what are their side effect?

[xXbrainttrafficXx](#)

(Dr. Jay Patel) One question that nobody has asked yet is: What are therapies for Influenza and their side effects? Therapy for the flu is generally supportive, including rest, adequate hydration and pain and fever reducers. In patients who have intolerable symptoms, complications (such as pneumonia), or risk factors for complications (such as immune suppression), anti-viral therapies are available. The most commonly prescribed anti-viral medication is called oseltamivir (trademarked under Tamiflu). This medication reduces the duration of symptoms by up to three days when taken within 48 hours of symptom onset. Oseltamivir is generally well-tolerated and the most common side effects are nausea, vomiting, and/or upset stomach. Other anti-viral medications are available but are generally less effective or associated with greater side effects.

How many known strains of the flu are there? Of those, how many are regular players in public health? How often do new strain pop up?

[itusedtobeagoodname](#)

(Dr. Jay Patel) There are three Influenza viruses. Influenza A, B, and C. We will ignore C here because it rarely causes disease in adults.

Influenza A undergoes major changes in its structure, making it more difficult to "keep up with" with vaccinations while B undergoes less change.

The Centers for Disease Control and World Health Organization track the different isolates around the world and provides weekly updates on their website: <https://www.cdc.gov/flu/weekly/>

Is there a rapid test that people can take to know if they have the flu? When do you decide to start Tamiflu?

[matt2001](#)

Thanks for answering this, Dr3ux!

Yes, matt2001, Dr3ux is correct. There is a rapid test that your provider can do. And Tamiflu works best when given in the first 48 hours of symptoms.

Hey there, sounds like you're both doing amazing work!

My question is about how you educate your patients on the value of the flu shot? In the years where the strains are not the greatest match a lot of patients tend to discount the value of an annual flu shot. For the average lay person it's not always clear what the exact benefit will be. Thanks in advance!

[Sir_Wemblesworth](#)

Hi, Sir_Wemblesworth. Thank you!

I typically use an answer like this. Even if the current year's influenza vaccine isn't a perfect bulls-eye, there are still significant benefits from getting a yearly Flu vaccine. The vaccine is more of a shotgun blast than a rifle shot. Even without an exact match, antibodies made in response to your yearly influenza vaccines provide protection against different but related influenza viruses. Having immunity to these different influenza antigens can still prevent or reduce the severity of flu infections this year and may protect you from infections in the future.

Also, when more people get the flu shot, it also increases "herd immunity." For example, when you get the flu, you may give it to five other people, who each give it to five other people. Eventually, somewhere along that chain of transmission, a susceptible individual, such as a child, elderly person, someone with chronic illness, or someone getting chemotherapy, is going to get very ill. If more of us are vaccinated, we can prevent ourselves from transmitting it, and perhaps prevent that one vulnerable person from getting it. Consider that the one vulnerable person is the child or grandparent of someone you know—wouldn't it be worth it?

Yahoo is reporting that [A 'universal' flu vaccine is in the Works](#) citing to an article in [Nature Communications](#).

Coming from a lay person, is there reason to be optimistic about a universal vaccine for influenza A in the near future? Or is the reporter reading a bit too much into that paper?

[Sharpopotamus](#)

(Dr. Jay Patel) Remember that there are three types of Influenza: A, B, and C. The trivalent inactivated vaccine contains strains from A and B, chosen by the World Health Organization.

Universal vaccine development has been in the works for many years and relies on identifying antibodies that could inactivate numerous forms of the flu. Influenza A has the ability to mutate (i.e., change its structure). Therefore, while promising, Influenza's ability to change itself makes a universal vaccine development difficult.

What's the difference between the flu and the stomach flu?

[PurpleButt3rfly](#)

(Dr. Chris Carroll) Great question! The flu IS NOT the same as "stomach flu". Great example of confusing terminology. What people refer to as "stomach flu" is really gastroenteritis and is characterized by nausea and vomiting and muscle aches. This is caused by another type of virus (like norovirus) and is different from the Influenza virus.

How many years does the antibodies formed from a flu shot remain in our body to be effective enough to combat a flu infection?

(Will my 25 years worth of flu shots maintain all the various antibodies for the rest of my life?)

[b2thewall](#)

(Dr. Chris Carroll) Great question, b2thewall! It depends. Mostly because the Flu is an extremely adaptable virus that changes significantly over time through a process called antigenic shift. As the virus cycles through humans, pigs, and birds, there are proteins on the top of the virus (antigens) that change and adapt. These antigens are what your body uses to recognize an infection and fight it off. Vaccines give us protection by teaching our body these antigens. But since the virus changes every year, and in ways we can't predict, it is hard to know how much protection previous vaccines will provide. You may remember that back in the bad 2009-2010 year, there were antigens (H1N1) that hadn't been seen in many years. So us older folks had seen them before and were more protected. Some people think that's part of the reason why 20 year olds were disproportionately hit and had such a rough time in the 1918 Influenza outbreak. They hadn't seen a strain like that before.

How important is it to get a flu test result back to treat the symptoms of flu?

Do you wait for results, or just prescribe medication based off of symptoms?

[dirtyrango](#)

(Dr. Jay Patel) In someone who has prototypical symptoms, such as muscle aches, fever, headache, sore throat, etc. in the right context (e.g., winter month), starting therapy before obtaining test result may be warranted. Anti-viral therapy has been shown to reduce the duration of symptoms up to three days, but therapy should ideally be started within 48 hours of symptom onset.

Remember though that any therapy, including that for the flu, is not without risks. Therefore, if the symptoms are mild and tolerated and the individual does not have any risk factors for complications, then foregoing therapy may be warranted as the risk of the therapy may outweigh any observed benefit.

Having a problem with a Bigfoot creature?? I will remove your nuisance monster. I remove Sasquatch AND dogmen. VERY DISCREET.

[r/SasquatchAttacks](#)

[BudRock56](#)

(Dr. Chris Carroll) Isn't Bigfoot just Chewbacca? I wouldn't mess with him.

http://starwars.wikia.com/wiki/Into_the_Great_Unknown