

What you need to know about respiratory syncytial virus (RSV) with Paul Offit, MD

AMA Update covers a range of health care topics affecting the lives of physicians, residents, medical students and patients. From private practice and health system leaders to scientists and public health officials, hear from the experts in medicine on COVID-19, monkeypox, medical education, advocacy issues, burnout, vaccines and more.

Featured topic and speaker

Today we cover everything parents and physicians need to know about respiratory syncytial virus (RSV) with Paul Offit, MD, director of the Vaccine Education Center and an attending physician in the Division of Infectious Diseases at Children's Hospital of Philadelphia. Dr. Offit is also a member of the FDA's vaccine advisory committee. American Medical Association Chief Experience Officer Todd Unger hosts.

Speakers

- Paul Offit, MD, director of the Vaccine Education Center and an attending physician in the Division of Infectious Diseases at Children's Hospital of Philadelphia

Transcript

Unger: Hello, and welcome to the AMA Update video and podcast. RSV is going around, and we're here to get the latest from Dr. Paul Offit, director of the Vaccine Education Center and an attending physician in the Division of Infectious Diseases at Children's Hospital of Philadelphia. I'm Todd Unger, AMA's chief experience officer in Chicago. Welcome back, Dr. Offit.

Dr. Offit: It's my pleasure. Thanks for having me back.

Unger: Well, we're seeing the headlines everywhere. We're facing the “triplendemic” this fall with COVID, flu, and RSV, and RSV is getting a lot of the headlines in the news. Why don't we just start by talking about where things stand right now with RSV across the country?

Dr. Offit: It's certainly worse than I have ever seen it, although there are bad RSV seasons, and then not-so-bad RSV seasons. I've been an infectious disease expert now for 40 years and have never seen it this bad. Our hospital is absolutely overwhelmed with this virus. It is all hands on deck.

Fellows in other divisions, attendings in other divisions, are now being asked to come down to the emergency department to take care of the hundreds and hundreds of children that we're seeing every day in our hospital. Our hospital beds are full, our intensive care units are full with this virus. It is the worst I've ever seen it.

Unger: So let's talk about the why. Why is this hitting so much harder this year than it ever has?

Dr. Offit: Well, so one prevalent theory is what happened in 2020. In 2020, when SARS-CoV-2 virus entered this country in January of 2020, we didn't have anything. We didn't have monoclonal antibodies, we didn't have antiviral agents, we didn't have vaccines.

All we had was the ability to restrict our contact with other people. So we masked, we social distanced, we isolated, we quarantined, we closed schools, we closed businesses. And what we did during that one year is virtually eliminated what, when a respiratory virus is. We didn't see any influenza. We didn't see any RSV. So you lost that population immunity, if you will, because as those virus circulate, you're always sort of building population immunity.

So I think what people are arguing, and it seems to be the prevalent theory, is the so-called immunity gap that we lost by having that year. And now these viruses are coming back with a vengeance. Certainly, RSV and, I think, flu is right around the corner.

Unger: So just what you were talking about in terms of the hospitals being full, I'm hearing about hospitals sending patients pretty far away to get treated. It's very reminiscent, in some respects, of the early waves of COVID. How are hospitals like yours coping with this kind of influx of patients?

Dr. Offit: As best we can. All we have is supportive therapy. So if children require oxygen, we give oxygen. If they require going to the intensive care unit and being ventilated, then we ventilate. There is no specific antiviral treatment for RSV.

There are monoclonal antibodies like palivizumab. There's a new monoclonal antibody, actually, it was just approved in Europe, that is a longer acting monoclonal antibody. It's called nirsevimab that was just approved this month, and that may also happen here, but otherwise, you're just stuck trying to treat this supportively.

Unger: And so without those kinds of treatments, what are patients looking at in terms of the recovery process for this?

Dr. Offit: Well, I think from a parent standpoint, you should worry if one of two things occurs. You have to make sure your child is well hydrated, that if they're crying, they're not tearing, or they're urinating less frequently. We need to maintain hydration. Secondly is if your child is having difficulty breathing, then I think it's important to bring the child to the doctor, to the emergency department.

But true to that, we see RSV every year. Generally, children survive RSV although certainly there are, for children anyway, about 150,000 hospitalizations and between 100 to 300 deaths a year. So RSV can kill to the same extent in many ways that flu does. But all you have for right now is supportive therapy.

Unger: How do you know, you're a physician or you're a patient or parent, the difference between RSV and a cold, and a normal kind of cough with that?

Dr. Offit: So, all these winter respiratory viruses, human coronaviruses, parainfluenza virus, flu, RSV, all those viruses cause congestion, cough, sore throat and fever, including high fever.

What you worry about is when these viruses infect the lungs and cause pneumonia, cause a viral pneumonia, and sometimes there's a bacterial superinfection on top of a viral ... but viral pneumonia can be fatal, and that's why for the most part 100 to 300 children do die every year from RSV. In older populations, the numbers are even worse.

Unger: Well, it sounds like a vaccine would be obviously a huge benefit here. I know there are some trials underway for that right now. How are they going? And what's the prospect for a vaccine anytime soon?

Dr. Offit: Well, interestingly, the first attempts in RSV vaccine were back in the 1960s. What researchers at the National Institutes of Health did was they took RSV virus, grew it up, purified it. So it was whole virus, and then inactivated that whole virus with the chemical formaldehyde, which is in much the same way that we make the hepatitis A vaccine or the polio vaccine.

What they found is that when they gave that to children, those who got the vaccine when they then were confronted with the natural virus did worse, meaning they were more likely to be hospitalized if they were vaccinated than if they weren't vaccinated. And that set research back for decades. People became very scared about RSV vaccines because of that experience in the 1960s.

What we had to learn was that the key protein for RSV, the protein that sits on the surface of the virus, is called the fusion protein. That's the virus that attaches—I'm sorry, that's the protein that attaches the virus to cells, and that's the protein against which you want to make an antibody response to prevent

virus cell binding.

But what we had to learn was that you had to sort of lock that fusion protein into a prefusion state. And I think we've learned to do that. In many ways, this is analogous to the SARS-CoV-2 vaccine, which is also a fusion protein locked into its prefusion state. So, we're getting there.

I think that there are a couple of companies now that are very close to this now purified protein approach, just the fusion protein made using recombinant DNA technology in much the same way we make the flu block vaccine. So I think we're getting there.

I think we'll have a vaccine for pregnant women soon because you want to protect children in those first six months of life, especially premature children. I think we'll have a vaccine for young children soon, and I think we'll have a vaccine for adults, including elderly adults relatively soon. I would think within the next few years.

Unger: That's good news. In the meantime, what should physicians be telling concerned patients and parents out there? How worried do they need to be?

Dr. Offit: Well, not to panic. I think the health care systems now are being overwhelmed by this virus, and in part, by people who don't necessarily need to be seen because they have relatively mild illness. I think that what we do when we sort of hang crepe and make this all the more frightening is we scare people into thinking that even a mild illness is very quickly going to become a severe illness, and they need to be seen now. That's not true.

I think for the most part, children do survive this infection and do well with this infection. Just make sure your child is well hydrated. And if you have any questions about the fact that they're starting to really have difficulty breathing, then bring them into the doctor's office.

Unger: Now we typically think of RSV as a pediatric disease, but somebody on my team recently took her child in and they tested the parent as well because, obviously, other groups can be seriously affected too. Beyond children, who would we say is at most risk of developing a severe case of RSV?

Dr. Offit: The elderly, where you'll see about 60,000 to 100,000 hospitalizations a year, and you'll see 6,000 to 10,000 deaths a year, you're much more likely to die as an older adult than as a child. And you can see the same thing with COVID.

I mean, the elderly, and by that I mean elderly, elderly people over 75, when they get a viral respiratory infection, that can often be their way out, whether it's flu or SARS-CoV-2 or RSV or any of the other sort of winter respiratory viruses, that can be their way out. So this is a killer in elderly adults, and I think we'll have a vaccine for elderly adults probably fairly soon.

Unger: So in the meantime while we're waiting for that, what can people do to minimize their chances of getting RSV in the first place?

Dr. Offit: It's hard to avoid. These are common infections that are easily transmitted by small droplets of emitting from the nose and throat when you're sneezing or coughing or even talking. It's just hard to avoid it.

I mean, think about what we did actually to avoid it. We did successfully avoid it in the year 2020, but we had to pretty much never leave our house to avoid it. Once we've left our house and are now resuming life as normal, which we're doing, I mean, people are living and working and playing as normal, and so these viruses are going to circulate. There's really no way around it.

Unger: Well, we're obviously heading into a period where being around other people is going to be pretty common here. What should families do in light of the holidays approaching? Any kind of change in behavior you'd suggest?

Dr. Offit: Well, I think if your child is sick, you really shouldn't have them go and interact with other members of the family. I think no matter what it is. I think what's happened, I have friends actually who have young children, and what will happen is they'll test their young children to see whether they have COVID.

And then when they don't have COVID, they think great, not a problem. And they send them off to school with their RSV or with their influenza, which can be just as serious and just as deadly, and you need to take all these winter respiratory viruses seriously. You could argue that what we should do is that when the child is sick, keep them home until at least their symptoms have abated.

Otherwise, if you're sick, you should try and stay home. If you can't stay home and you have a respiratory infection, at least wear a mask when you're out so that you don't infect others. Maybe we'll evolve to that over time. As the winters move on and these viruses continue to circulate, the lesson that we will have learned from COVID is not to suffer the sin of presenteeism, meaning that you go to work when you're sick and infect other people.

Unger: That sounds like good advice. The same advice I give my team as well. Thank you, Dr. Offit for being here today, and for all that background and perspective on RSV. We always look forward to having you on the show, and we'll talk to you again soon. In the meantime, you can find all our videos and podcasts at [ama-assn.org/podcasts](https://www.ama-assn.org/podcasts). Thanks for joining us today, and please take care.

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