

Episode 15 – How Do Outbreaks Happen

With Dr. Catherine O’Neal

Deon (00:00):

How do outbreaks happen and what role to vaccines play in ending them? You'll find out on today's episode of Vax Matters.

Deon (00:14):

Hey there. I'm Deon Guillory. On today's show we're discussing disease outbreaks. And we're joined again by our friend Dr. Katie O'Neal. Now if you remember from a previous episode, Dr. O'Neal is an associate professor of clinical medicine specializing in infectious diseases at the LSU Health Internal Medicine Residency in Baton Rouge. She is also the chief medical officer of Our Lady of the Lake. Thanks again for joining us, Dr. O'Neal.

Dr. O'Neal (00:38):

I'm so glad to be here. Thank you for having me.

Deon (00:40):

Okay. So this is, I, I am so interested in this because, and I guess it, you know, we have been living in a pandemic and so, uh, this is perfect, um, topic for our conversation. But, y-you, you hear about these outbreaks that have happened through history. You know, you've got the Bubonic Plague, uh, to the Corona Virus. Disease outbreaks have been a constant throughout history, but where does it all start and what actually starts an outbreak?

Dr. O'Neal (01:13):

So, an outbreak is really just a sudden surge of something that is unpleasant. I mean, that's, that's the definition.

Deon (01:20):

Mm-hmm.

Dr. O'Neal (01:20):

So very interesting. So, we can have an outbreak of anger, really. But when we talk about an outbreak of infectious diseases, it really is just a surge of an infection in one place. When we talk about epidemics and pandemics, then we start to define whether that outbreak is local, on the local level, that's an epidemic, or a pandemic, whether that outbreak is, uh, is affecting a whole country or the whole world.

Deon (01:42):

Okay.

Dr. O'Neal (01:42):

And obviously with COVID-19 we've seen a pandemic.

Deon (01:45):

Right.

Dr. O'Neal (01:46):

An outbreak that's affected the whole country. But when you think about the flu, or you think about any summer that you said, man, everybody's getting a cold.

Deon (01:54):

Mm-hmm.

Dr. O'Neal (01:54):

Those are local outbreaks, and they're just a sudden surge of infections at one given time.

Deon (02:02):

Yeah. Okay. So, that's a great way to break it down.

Dr. O'Neal (02:02):

(laughs).

Deon (02:03):

'Cause, 'cause, you know, I, I guess if you're of, of a particular age, um, when you think of outbreak, uh, you think of, I, I, I'll just put myself on the spot. I think of that movie Outbreak-

Dr. O'Neal (02:12):

(laughs). Right.

Deon (02:12):

... with, with Dustin Hoffman.

Dr. O'Neal (02:13):

So do I. Absolutely.

Deon (02:14):

Um, or you even think of the movie Contagion.

Dr. O'Neal (02:18):

Mm-hmm. Yeah.

Deon (02:18):

You know? So, it, it's, it's-

Dr. O'Neal (02:18):

We've made it dramatic.

Deon (02:19):

Mm-hmm.

Dr. O'Neal (02:19):

But really and truly, did I have an outbreak of, you know, um, the sniffles at daycare?

Deon (02:26):

Right.

Dr. O'Neal (02:26):

At my, I have three children and we have experienced many, many daycare outbreaks, right?

Deon (02:30):

(laughs) Of course.

Dr. O'Neal (02:30):

Um, but they come and they go and it's just a surge of infections. Everybody goes home, everybody's got a lot of snot, and then it goes away. And that's the simplest form. So, we experience them in, we experiencing them every day.

Deon (02:41):

Mm-hmm.

Dr. O'Neal (02:41):

But, um, but some are more scary than others.

Deon (02:44):

Right.

Dr. O'Neal (02:44):

Especially the last two years.

Deon (02:45):

Right.

Dr. O'Neal (02:45):

Yeah.

Deon (02:46):

Um, what, where do infectious diseases originate? Like, how does it, how does it start?

Dr. O'Neal (02:52):

Yeah. You know, we live in a super gross world. So, infectious diseases are all around us, which is why my career is so fun.

Deon (02:59):

(laughs) Right.

Dr. O'Neal (02:59):

And it, you know, from the, the human body, which is disgusting, and we produce a lot of infectious diseases, but also the world around us, um, bats and birds and cows and manure and the dirt you dig in to plant your tomato plants.

Deon (03:14):

Mm-hmm.

Dr. O'Neal (03:14):

Everything is full of microorganisms and viruses. And so really how things spread is how do we live with these things but protect ourselves from becoming infected with these things. So, a couple of things, we don't drink contaminated water. Bad water, bad food, contaminated food, can be the source of an outbreak. And we see that every once in a while. You know, suddenly there's an alert on the TV, throw away your lettuce. And that's usually-

Deon (03:39):

Right.

Dr. O'Neal (03:39):

... some sort of contamination from the ground or the water where that lettuce was grown. But we also see things like, um, the introduction of a new virus. That's what happened when COVID-19 and a population that has no immunity and so it spreads like wildfire. We saw just this past month, I, um, an infection of a different kind of influenza because a bird got it first and somebody handling those birds-

Deon (04:02):

Right.

Dr. O'Neal (04:02):

... got influenza from the birds. So, a variety of ways in which we get infections. But honestly, we live amongst them every day.

Deon (04:08):

Uh, you, uh, you really put it into perspective, and I'm like, thinking to myself, I should wear gloves everywhere.

Dr. O'Neal (04:14):

(laughs). No, no.

Deon (04:14):

But no, no, no. Don't have to go to that extreme.

Dr. O'Neal (04:16):

It's healthy, it's healthy. Yes.

Deon (04:16):

Well, and that's the thing because, you know, when, when you come into contact with things and you get sick or whatever it, it helps build up your immune system.

Dr. O'Neal (04:26):

To a certain degree we all have to, to practice, to be able to play, right?

Deon (04:30):

Right.

Dr. O'Neal (04:30):

And, and so, our, you know, earlier we did an episode about athletes, but when you really think about how do we build immunity? It's no different than practicing for anything or even studying for a test.

Deon (04:40):

Mm-hmm.

Dr. O'Neal (04:41):

We, throughout our lifetime, are building our immune system. We're, we're getting vaccines and saying, hey, I hope if I see this again, I'm gonna be ready for it. Or we go to daycare and we get sick like 10 times within the first two years, but then after that kids just kinda stop getting sick because-

Deon (04:55):

Right (laughs).

Dr. O'Neal (04:55):

... they've built up immunity. They've learned something. They've practiced enough that they're good at it now. And so, our inner play with our environment, that interaction, whether I am planting my tomato plant, dealing with my cow or chicken, or is sitting too close to somebody on the bus and I get sneezed on, how we respond depends on the interplay with our environment that we've kind of en massed our whole life.

Deon (05:15):

Mm-hmm.

Dr. O'Neal (05:16):

We've been practicing for this moment. Are we good at it yet?

Deon (05:19):

Right. Yeah. I'm, I'm good with practices.

Dr. O'Neal (05:21):

(laughs).

Deon (05:23):

Um, (laughs) uh, so, uh, what causes a disease outbreak? You know, a, I, I talked about, you know, the, the movies that you, you know, you, like you said, we've made it scary and, and of course, it's a movie, it's for dramatic effect.

Dr. O'Neal (05:37):

Mm-hmm.

Deon (05:37):

But what, what really causes a disease outbreak?

Dr. O'Neal (05:42):

Yep. So, when we, when we look at disease outbreaks or the spread of disease in infection control, just break it down to the science. A disease outbreak occurs because of a susceptible host. You have some sort of thing that is capable of producing an outbreak, whether that's contaminated food, or a virus coming at you and then you have to have a susceptible host. So, that means that you have to be able to be infected.

Deon (06:05):

Mm-hmm.

Dr. O'Neal (06:06):

So, if I am sitting here, I don't have a bubble around me. If I have a wound, I will, I will be more able to be infected from the just bacteria that lives in the environment next to me-

Deon (06:15):

Mm-hmm.

Dr. O'Neal (06:15):

... 'cause I have an open wound. If I have never been exposed to the virus, a susceptible population, people who've never seen this before, then we are susceptible to an outbreak of a virus. We saw that happen, we, we talk about this all the time. What happened when the Europeans came and tried to settle the Mayans, right?

Deon (06:32):

Right. Mm-hmm.

Dr. O'Neal (06:33):

Bad things. Because we introduced new organisms in a susceptible host. So, if I have not been able to practice during my life and I have no immunity to a virus, just the onslaught of that virus in the population can be devastating. But if I introduce a vaccine, or if kids get these infections early in life,

when they're more capable of dealing with them and they learn, by the time they get to adulthood, that infection's not as severe.

Deon (06:59):

Mm-hmm.

Dr. O'Neal (07:00):

As it was. Interesting, when we had the, um, the swine flu epidemic, when, it was a pandemic. It affected the world, um, in 2009, it affected mostly 20, 30, and kinda 40 year old's. It didn't affect young kids as much. They had, you know, they, they're, they do fairly well. There were some young kids who got infected, but not as bad and it didn't affect the older population because they had seen a similar flu in their lifetime.

Deon (07:26):

Oh.

Dr. O'Neal (07:27):

So, the only people who were naive were that 20 to 30 kinda early 40 year old population and that's who got really sick. So, you need susceptible people to have an outbreak.

Deon (07:37):

Okay. All right. See, that's why I like talking to you.

Dr. O'Neal (07:40):

(laughs).

Deon (07:40):

'Cause you really break it down (laughs) and, and, you know, for all of us to understand. And, you know, that's the point of this so-

Dr. O'Neal (07:47):

Yeah. We do, s- uh, I learned how to count and I learned how to divide and multiply and we should know the basics of how to transmit infection.

Deon (07:55):

Mm-hmm. I like that. Um, can, can you explain, um, the different ways that a disease can be transmitted? And, um, in addition to that, how it can be stopped.

Dr. O'Neal (08:07):

Great. Okay. So, first, how can it be transmitted? Through direct and indirect contact. Let's break that down. Direct contact. There is salmonella on my chicken-

Deon (08:19):

Mm-hmm.

Dr. O'Neal (08:19):

... and I put it in my mouth. Yikes. I'm infected, right? Or, I have an open cut and then I put it in mud. Yikes.

Deon (08:29):

Right.

Dr. O'Neal (08:29):

Direct infection. Also, I'm sitting next to my kid and they basically sneeze in my mouth, which has happened and it's gross, but every parent has experienced that, right?

Deon (08:38):

(laughs).

Dr. O'Neal (08:39):

Oh, my goodness. Okay.

Deon (08:40):

Unfortunately.

Dr. O'Neal (08:40):

I'm infected. Um, so direct contact. And then there's indirect contact. Somebody was here before me and they left something here that I don't wanna come into contact with but I do. And that can be anything. Um, in the hospital we see it as contaminated instruments. So, we spend a ton of time making sure that everything that comes near you is clean because otherwise through indirect contact, something that touched somebody earlier and now might touch you might get infected. Um, other ways that we see that is aerosolized particles. So, you were-

Deon (09:13):

Okay.

Dr. O'Neal (09:13):

... in the room 10 minutes ago and now I'm in the room, but I breathe it in and that's technically indirect contact. So, two ways. I either put it directly on me, smear it up like, you know, peanut butter.

Deon (09:22):

Mm-hmm.

Dr. O'Neal (09:22):

Or, in some insidious way, I come into contact with something somebody's left behind.

Deon (09:27):

Okay. Yeah. And, and that's one of those just things that, it, it, it's so interesting because that's where, you know, vaccines come into play.

Dr. O'Neal (09:40):

That is. So, if you talk about prevention.

Deon (09:42):

Mm-hmm.

Dr. O'Neal (09:42):

How do I prevent all those things? Well, I can't. I'm living my life, right? So, how do you really prevent from becoming infected? I wash my wounds. I wash my hands. There's some basics to this.

Deon (09:53):

Right.

Dr. O'Neal (09:53):

If we just had less bacteria around we'd get less infected. I cook my food all the way through. But then after that, the thousands of viruses we live with in our life, and come into contact with, and the thousands of people that we sit closely to on the bus, the only way to protect ourselves is to be vaccinated, to be ready to receive that infection and have practiced already. I want to practice to be better. If I'm gonna go into a battle, I want to take my tools with me.

Deon (10:19):

Mm-hmm.

Dr. O'Neal (10:19):

I don't want to have that battle be the first time I stepped out on the court the first time I stepped out to play. And so, vaccines are practice and you wanna be ready to, um, to accept that virus and say, I got something for you. Back at you.

Deon (10:32):

And wash your hands (laughs).

Dr. O'Neal (10:33):

And wash your hands while you're at it (laughs). Let's just be cleaner.

Deon (10:35):

Let's just-

Dr. O'Neal (10:36):

(laughs).

Deon (10:36):

I think that'll help (laughs) a whole lot. Um, how has the spread of diseases changed over the years, 'cause, uh, you know, I know throughout history, modern medicine has changed, you know, um, how we fight things, a-and, and diseases and, you know, people recovering from cold or anything like

that. But how, how has the spread of diseases changed over the years, um, when it comes, um, with the increase in ease of travel? Because-

Dr. O'Neal (11:09):

Right.

Deon (11:09):

... I know, you know, with the pandemic, that's kinda, people are slowly getting back to travel, um, as things open up more and everything, but how has this changed through, through this whole thing?

Dr. O'Neal (11:22):

So, first and foremost, the spread of disease over time has just been improved by basic hand hygiene.

Deon (11:27):

Mm-hmm.

Dr. O'Neal (11:27):

Cleaning up our water. We know how to cook our food now. And people used to die and become ill of bacterial illnesses that we just don't see anymore, so basic infection prevention has saved countless lives. After that, vaccines have saved countless lives. We have been able to prepare the population to get sick from something. To see an infection enter the population and say, I know about this, I can respond. But, we still can't imagine how many people we come into contact with and part of that's because global travel, you know?

Deon (11:58):

Yeah.

Dr. O'Neal (11:59):

When you, when you go to New Orleans Mardi Gras and we saw that happen in the March of 2020, you are not just going with your family and friends from Eunice.

Deon (12:08):

Mm-hmm.

Dr. O'Neal (12:08):

You are going with people from Taiwan, you are going with people from Seattle. You are exposed to so many new things because we are a global community. And so, you have to be prepared to face global viruses. And, I think that most of the time we are. Um, especially those who travel a lot because most people are fully vaccinated. Then enter something new, something that we've never seen, uh, took, you know, it felt like eons but only a year-

Deon (12:36):

(laughs) Yes.

Dr. O'Neal (12:36):

... to make a vaccine for it. And in that year, you're waiting, hoping you don't become infected, hoping that you can be able to practice before you see this infection, and it can assault a population. So, uh, you know, I think global travel for the most part has made us aware of our, the need for protection. I think we do a decent job, but we all have to, to still be aware of our risk-

Deon (12:57):

Mm-hmm.

Dr. O'Neal (12:57):

... that every day that I go into a big city, I'm really diving into the world.

Deon (13:01):

Yeah. And I think that, that's, that's such a reality check, you know, because a lot of times we live in our own little bubbles with our, um, I'll use a term that you, you like to use, y-your own little communities. And, you know, when we go somewhere that is outside of that, we don't always think of where other people may have been.

Dr. O'Neal (13:25):

Mm-hmm. Mm-hmm.

Deon (13:26):

So, that's kind of, you know, uh, something to always keep in the back of your mind.

Dr. O'Neal (13:29):

Yep. I got a call from someone a week or two ago who, um, who had COVID. Felt great, was boosted, um, but, you know, some sinus congestion, said I, I took a test and I, and I have it and I need to tell everybody who I was with recently. And then she said, um, I just don't know how I got this. I said, well, where have you been? Well, we did go to D.C. last week. I said, well, D.C. is seeing an increase in COVID-

Deon (13:52):

Mm-hmm.

Dr. O'Neal (13:52):

... so, there you go. But we saw that, we've seen that in so many public health issues that one person traveling brings it back to your team, to your community, and now your community's susceptible, so, you know, I always go back to my hometown, but if I'm sitting in Mamou, Louisiana and I'm getting my boudin at the gas station, I am just as susceptible to a global pandemic as somebody whose sitting in D.C.

Deon (14:17):

Right.

Dr. O'Neal (14:17):

We don't think that way, but somebody in Mamou has gone to watch a play or gone on vacation recently.

Deon (14:22):

Right.

Dr. O'Neal (14:22):

And they brought it home.

Deon (14:23):

Yeah. You just, you just never know.

Dr. O'Neal (14:24):

Yep.

Deon (14:25):

Um, you know, we, we've talked about how outbreaks begin and how we can control them, but how do they end?

Dr. O'Neal (14:35):

They end the same way that we've talked about practicing. They end when we've gotten enough practice. They end when we have either had enough people who have been infected that there is at least some amount, some degree of immunity out there, and really the best way to end it, and the fastest way is to get people vaccinated.

Deon (14:52):

Mm-hmm.

Dr. O'Neal (14:52):

Because then we know everybody's practiced well. And just like any practice, and we're seeing that with COVID, I can't just practice once and go to play. I cannot be a professional football player if I put a ball in my hand, threw it to my dad, and said I'm ready to go.

Deon (15:06):

Right. It doesn't work that way.

Dr. O'Neal (15:06):

My son might think that that's the case, (laughs) but-

Deon (15:08):

(laughs).

Dr. O'Neal (15:08):

... but it's not. Um, and so, what we're seeing is that it does take a little bit of memory and you do have to get a couple of vaccines to really build up enough memory to say, you know, when COVID

hits our community again and I, I think we're, we may be there right now, where we're seeing a little bit of increased cases again. People have been moving around a little bit more.

Deon (15:26):

Mm-hmm.

Dr. O'Neal (15:26):

But what will be telling is if that comes and goes without an increase in hospitalizations, an increase in death, and really even an increase in people not coming to work. If it blows through us very mildly, then we know that we have reached enough immunity that this doesn't really affect our daily lives anymore.

Deon (15:43):

Mm-hmm.

Dr. O'Neal (15:43):

That's success, and we'll know it when we see it.

Deon (15:46):

Right.

Dr. O'Neal (15:46):

And, um, and until we go through another surge or so and don't see that kinda cataclysmic effect, um, we won't know if we're there.

Deon (15:54):

Yeah. And that, and that goes back to showing the importance of vaccines.

Dr. O'Neal (15:58):

Absolutely.

Deon (15:59):

Mm-hmm.

Dr. O'Neal (15:59):

We have all gotta build up our immunity. How do you wanna build it up?

Deon (16:02):

Right. Um, let's talk about Smallpox.

Dr. O'Neal (16:06):

Okay.

Deon (16:06):

You know (laughs), uh-

Dr. O'Neal (16:07):
(laughs).

Deon (16:09):
Your eyes just lit up on that one.

Dr. O'Neal (16:10):
Talk about scary.

Deon (16:11):
(laughs).

Dr. O'Neal (16:11):
(laughs).

Deon (16:12):
Why is it that Smallpox is the only completely eradicated disease?

Dr. O'Neal (16:18):
Yeah. You know, a couple of reasons. Number one, because my eyes lit up, it's super scary, so why wouldn't you go get your Smallpox vaccine, right?

Deon (16:24):
Right.

Dr. O'Neal (16:24):
So, I think that when, when Smallpox came to be, um, there was a, a big interest in shutting it down as quickly as possible. It caused horrendous, um, deformities of the skin.

Deon (16:35):
Mm-hmm.

Dr. O'Neal (16:35):
It was very obvious who had Smallpox. It caused just long-lasting effects on health. And so, nobody wants it. Everybody wants to get rid of it. And so we're very accepting of a cure. Also, when you have a disease that's very transmissible but also is outwardly, you're outwardly sick, I can tell you have Smallpox-

Deon (16:55):
Mm-hmm.

Dr. O'Neal (16:55):

... um, it's easier to stay away from people. Everybody in Louisiana right now has the sniffles from allergies, that's what it feels like at least, you know?

Deon (17:02):

Yes. Oh.

Dr. O'Neal (17:03):

We've all been outside. We yelled at the Garth Brooks concert. So, now my throat is a little bit sore and a little it snuff, sniffy. Does that mean that I have COVID? Or does that mean that I have Louisiana, right?

Deon (17:13):

Right.

Dr. O'Neal (17:14):

Um, it's harder to tell who's infected and so, it allows the infection and the outbreak to go on longer. Whereas in such a visible outbreak, it's easier for everybody to sorta step back and say-

Deon (17:26):

Mm-hmm.

Dr. O'Neal (17:26):

... I think you're infected, we're all gonna, we're all gonna walk away. So, I think that the, the worse the outcome is on the patient, the more people wanna get, um, vaccinated and then also the ability to say you're sick and, and we were able to, sort of, stop that chain, um, earlier. But it, that's success, if we could only-

Deon (17:44):

Yeah, definitely.

Dr. O'Neal (17:45):

... achieve that kind of success, um, with measles and mumps and rubella, uh, we would really be, um, globally successful.

Deon (17:51):

Yeah. So, it, would that mean our, would that help with an answer sort of, you know, to why that is the only one? And, you know-

Dr. O'Neal (18:01):

Mm-hmm.

Deon (18:02):

... why has no other disease been in that posi-position?

Dr. O'Neal (18:05):

Right. Um, harder to get vaccine to everybody.

Deon (18:08):

Yeah.

Dr. O'Neal (18:09):

You know, when you, when you know you having a Small Pox outbreak, you could sort of, and this is occurred long before my I- my lifetime, you can surround that outbreak and, and stop it in its tracks whereas for measles, mumps, yeah, by the time they even came up with a vaccine, people were used to this cadence, almost like the flu, where it would come and go in your community.

Deon (18:26):

Mm-hmm.

Dr. O'Neal (18:26):

So, um, the vaccine wasn't as clean when it came out and then also, um, we haven't been able to vaccinate the susceptible part of the world like we would like to.

Deon (18:36):

Yeah.

Dr. O'Neal (18:37):

There are still lots of people who are not immune to measles and mumps.

Deon (18:40):

Oh, man. Um, you know, um, diseases, outbreaks, they've happened throughout history.

Dr. O'Neal (18:48):

Mm-hmm.

Deon (18:48):

What are some of the, like, the, the biggest ones in, in history?

Dr. O'Neal (18:54):

Um, I think, you know, we talked about why, why, um, do we know the movie Outbreak so, so well.

Deon (18:59):

Right (laughs).

Dr. O'Neal (18:59):

(laughs). Um, I think when you talk about big, um, I would have to say the plague. I mean it was-

Deon (19:03):

Oh, yeah.

Dr. O'Neal (19:03):

... you know, one of the few things that's truly affected the global death rate and, and affected how many people live on this earth in such a dramatic way. Um, but if you study the plague, it did also come and go over a long period of time. It wasn't like everybody died and that was it and we all walked away.

Deon (19:19):

Mm-hmm.

Dr. O'Neal (19:19):

Instead, the plague comes and goes still today, we're just much more aware of it. So, we do have cases of plague, um, but we, we grab them, we take them, we treat them, and then they're gone because public health has made a huge difference in the way that people act towards these kinds of things.

Deon (19:35):

So, there's still cases?

Dr. O'Neal (19:36):

Absolutely.

Deon (19:36):

Wow.

Dr. O'Neal (19:37):

Absolutely. But, we don't live in a society where we have open drainage in our, you know, in our communities.

Deon (19:43):

Right, right.

Dr. O'Neal (19:43):

We've done so much, as we talked about earlier, to just clean up the way we live, that it's almost impossible to see that kind of thing happen again.

Deon (19:50):

Mm-hmm. Um, it just, I'm, my mind is blown, um.

Dr. O'Neal (19:55):

(laughs).

Deon (19:55):

How, how do those, how, how do the past, um, outbreaks compare to the COVID pandemic?

Dr. O'Neal (20:05):

When you look at, um, the 1918 influenza outbreak, uh, I think that we could be reading the same book almost-

Deon (20:12):

Mm-hmm.

Dr. O'Neal (20:12):

... just with Twitter ins- (laughs) you know?

Deon (20:15):

Right.

Dr. O'Neal (20:15):

Um, it was, uh, it was a politicized. We w- we had enough global travel because we were having a war. Uh, we saw a huge amount of young people spreading the disease, but also saying I feel perfectly fine and I don't know why you need me to, to take these precautions. We saw the debate about masks. I mean, we really rewrote history in the last two years, and I think that's unfortunate because we could have learned so much-

Deon (20:39):

Mm-hmm.

Dr. O'Neal (20:40):

... from that time, but instead we, we just experienced it again. Um, but, but very similar. And so, we should take this lesson and we should not have to go through this again in 80 years, right?

Deon (20:52):

Yeah.

Dr. O'Neal (20:53):

Um, what are the things that we had that are better? That pandemic ended because enough people became immune that it could slowly fizzle out. We have vaccines now. Lord only knows how long this would have lasted without a vaccine, and so, can we bring vaccines to the forefront even faster next time? Um, and I think that's our charge.

Deon (21:12):

Mm-hmm.

Dr. O'Neal (21:12):

We need a vaccine that rolls out in two or three months to a new infection, not a year. Uh, it's a miracle that we got it out that fast, but, um, next time we should, we should work after this is over to, to be faster.

Deon (21:25):

Right. So history doesn't repeat itself.

Dr. O'Neal (21:27):

That's right. That's right.

Deon (21:28):

Yeah. Uh, is there a current outbreak of hepatitis in the US? You, you, you, there's, you know, you hear about it a little, a little bit-

Dr. O'Neal (21:38):

Mm-hmm.

Deon (21:38):

... you know, here and there. Um, and also, here in Louisiana?

Dr. O'Neal (21:44):

Right. So, we talked about, um, an outbreak is a sudden increase in something that is unpleasant, right?

Deon (21:50):

Mm-hmm.

Dr. O'Neal (21:50):

So, in the US right now, we have seen an increase in cases of hepatitis in very small children. And globally, we have also seen an increase in hepatitis cases in Europe. So, everybody's sort of wondering if they're connected. And then if they are, what is the reason why? Um, still overall, compared to COVID, very low numbers, but we're not used to seeing young people get sick from anything and a majority of these cases have been very severe. In fact, several of them have gone on to receive liver transplants. So, hepatitis is an inflammation in your liver.

Deon (22:23):

Mm-hmm.

Dr. O'Neal (22:23):

And it can be, um, mild and go away at like when you have mono, you often have inflammation in your liver. It's mild and it goes away. But sometimes it can be very severe, and you actually need an organ transplant and obviously, that's devastating. R- what we're trying to figure out right now is what's causing this inflammation in these children's livers and the, the thing that's on the top of the list but has not been totally confirmed is whether it's called adenovirus, a virus that we've, we've seen a lot of adenoviruses in our history, there're probably over 100 types of adenovirus, but this specific one may be causing more liver inflammation than we're used to seeing with the adenoviruses. So, um, lots of people rushing to figure that out. Making sure that, is that the cause, or we just seeing adenovirus right now circulating in kids the same time that we're seeing this hepatitis, and is there something else going on?

Dr. O'Neal (23:13):

And so, I know that there are lots of very smart epidemiologists on the case both here and in Europe working together to, to figure it out so that we can help parents figure out how to prevent-

Deon (23:23):

Right.

Dr. O'Neal (23:24):

... um, the next child from getting sick.

Deon (23:25):

Right. And you mentioned, so, is that, is, is, it's called adenovirus?

Dr. O'Neal (23:29):

Adenovirus.

Deon (23:29):

Now, what e- what exactly is that?

Dr. O'Neal (23:31):

Adenovirus is a virus that causes the common cold.

Deon (23:34):

Oh.

Dr. O'Neal (23:34):

Yep. Causes congestion and a cough and, like I said, in most of us in our lifetime have seen one, two, maybe even three or four adenovirus infections.

Deon (23:42):

Mm-hmm.

Dr. O'Neal (23:42):

But everyone is specific, just like each one of us, we're all human-

Deon (23:45):

Right.

Dr. O'Neal (23:45):

... but we're very different.

Deon (23:46):

Right.

Dr. O'Neal (23:47):

And every adenovirus is a little different. And in those children, there may be an interplay and that often happens with viruses where, you know, the majority of kids can get this and feel fine, but every once in a while, you find that child whose immune system and that virus don't go together well. So,

maybe that's what th- is going on. It would make sense. The only thing that really doesn't make sense right now is that adenoviruses don't usually cause hepatitis. So, is this just a different strain?

Deon (24:12):

Right.

Dr. O'Neal (24:13):

Or are we missing the boat and it's another cause and-

Deon (24:15):

Mm-hmm.

Dr. O'Neal (24:15):

... and I think that the jury's still out on that.

Deon (24:17):

Right. That, and that's why the experts are looking into it.

Dr. O'Neal (24:20):

Yep, yep.

Deon (24:20):

Yeah. Definitely. Dr. O'Neal, is there anything else you want our listeners to know, just about, just about outbreaks, uh, in general, and just how, you know, the steps that we can take to help prevent those things from happening?

Dr. O'Neal (24:35):

You know, I don't know how many times I've said, but I, I believe that it is the best thing to live a healthy life today and I believed it two years ago. Cover your cough. Wash your hands. Stay home if you're sick.

Deon (24:45):

Mm-hmm.

Dr. O'Neal (24:45):

Outbreaks occur because people are sick and disease spreads and however, we can mitigate that by just staying home when you're sick and not coming into contact with other people to, to spread infection is what we need to do for our team, our community and our family.

Deon (25:00):

Yeah. And, you know, I know, it, but it's so hard.

Dr. O'Neal (25:03):

(laughs).

Deon (25:03):

And I'm, I'm guilty of it myself.

Dr. O'Neal (25:05):

I know. We all are.

Deon (25:06):

Like, if I'm sick and I feel like I'm, oh, I had, I still have to go to work because-

Dr. O'Neal (25:12):

Mm-hmm.

Deon (25:12):

... you know-

Dr. O'Neal (25:13):

You don't wanna let your team down.

Deon (25:13):

Exactly.

Dr. O'Neal (25:14):

And I don't wanna give my team a cold that's gonna let them down.

Deon (25:17):

Right.

Dr. O'Neal (25:17):

And, and we have to marry that together and decide what the best decision is for us, but honestly, I, I don't want your cold either, right?

Deon (25:25):

Yeah.

Dr. O'Neal (25:25):

And you don't want mine. And so, I think being honest. And now, it's so easy to work from home for some.

Deon (25:31):

That's true.

Dr. O'Neal (25:32):

It's so easy to kinda hole yourself off.

Deon (25:34):

Mm-hmm.

Dr. O'Neal (25:34):

Masks do work. Right? So all of those things are tools that we didn't know before, we know now, and we can add those layers and protect our team a little bit better.

Deon (25:43):

Mm-hmm. And next time I'm sick, I'm staying home.

Dr. O'Neal (25:45):

(laughs).

Deon (25:45):

(laughs).

Dr. O'Neal (25:47):

Me too.

Deon (25:48):

Dr. O'Neal, thank you so much for your insight and great conversation as always.

Dr. O'Neal (25:52):

It's great to talk to you. Thank you for having me.

Deon (25:54):

I thoroughly enjoyed this conversation, uh, of course, and I can have another one with, uh, Dr. O'Neal. We could talk for hours. But we just don't have the time. So, to our listeners, thanks for tuning in. We hope you're leaving more informed. Be sure to catch our next episode coming soon.