

Episode 30 – Polio

With Dr. Robert Garry

Diane (00:00):

Today, Vax Matters tackles the disease we associate with yesteryear but that's still around today and that disease is polio.

Clay (00:16):

Welcome to the show. Our episode on polio brings in guest Dr. Robert Garry, a long-tenured professor of microbiology and immunology at Tulane Medical School. Now he heads a group of scientists who are developing preventive measures like vaccines and immuno-therapeutics for Lassa, Ebola, and Marburg viruses and more. Dr. Garry, thank you so much for helping us cover this widely discussed topic of polio.

Dr. Garry (00:45):

My pleasure.

Clay (00:47):

So let's start at the beginning for people who are uninitiated to this. What is polio and where did it come from?

Dr. Garry (00:55):

Well, uh, polio is a, you know, a serious viral illness. Um, in most, most people that contract, you know, the, the virus infection, you know, don't really get sick or they have a mild illness or, you know, it's more of a gastrointestinal type of bug for them. But in a small number of cases, you know, maybe one percent at the most, uh, the people will go on to develop a ser- serious neurological disease and this can actually, uh, turn into paralysis and, uh, and death, uh, in, in that small percentage of, uh patients. So polio is very serious.

Dr. Garry (01:32):

Uh, back in the '50s, uh, and before there were, um you know, waves of polio that spread through, um, basically the Western countries, so Europe an, and, the United States. And there ... it was a much-feared disease. It was, uh, as feared or more feared than, you know, than COVID-19 or some of the other viruses that we've been faced with more recently.

Diane (01:55):

Obviously, because it was so unknown and when you have something like that you're face with all of a sudden, here it is and so many people can be impacted with it, is it, is it highly contagious?

Dr. Garry (02:10):

Uh, it is highly contagious. It's, uh, probably much more contagious than, than some of the other viruses that we've been faced with more recently.

Diane (02:17):

Really?

Dr. Garry (02:18):

Yeah. It's spread by the gastrointestinal tract and so, uh you know, people get it. You know, they, they get it by ingesting it basically. It replicates, uh, in the intestine and for most people it just stays there, right? Um, and ... but, you know, that kind of, of a replication means that it's spread in, uh you know, uh, various places like the sewers and you know, people's ... around people's houses, bathrooms, you know, public restrooms, thing like that. So it's a highly efficiently transmitted pathogen.

Diane (02:51):

Mm-hmm.

Dr. Garry (02:51):

Okay? And so, um, you know, that's, uh, one of the reasons why, you know, more recently, people have been able to detect it in, uh, in sewage and in water from sewage treatment places, uh, plants and the like that, um you know, enables us to find the virus, uh you know, being even circulated today.

Clay (03:10):

So what are some symptoms of polio?

Dr. Garry (03:14):

Yeah. So like I said, in most people, you know, the symptoms are, are very mild or, you know, they miss ... might just feel a little bit off, there might be some gastrointestinal symptoms, um, but in a very small proportion of people, the virus actually escapes from the gastrointestinal tract, from your gut and, uh, then it becomes, uh, uh, and then it can get into your central nervous system, it can get into your spinal cord, it can get into your brain. And if it gets there, in that, you know, like I said, in a rare, you know, in a rare case, uh, the virus replication there can actually destroy some of those cells, uh, in the spinal cord, in the brain and, and cause, uh, serious neurological problems and paralysis and then ultimately death.

Diane (03:58):

It sounds like with "the milder symptoms," it almost mimics the flu, at least that's what it sounds like to me.

Dr. Garry (04:07):

It, it, it does in, in some ways, yes, and that, that, that is, uh, one of the reasons that makes it such a, you know, a, a feared virus.

Diane (04:15):

Mm-hmm.

Dr. Garry (04:15):

Any one case of polio, uh, in a community means that the virus is probably already spread to a lot of other people just because it is so transmissible.

Clay (04:25):

That's so interesting. So you talked about it being, the way that it effects, uh, the immune system and the body, talk with us a little bit about how it's spread.

Dr. Garry (04:36):

Well, it's spread by the gastrointestinal route. So, you know, people, you know, have to go to the bathroom, right? They have to, they have to, uh, you know, they have to pass out their fecal material and the like.

Clay (04:47):

Sure.

Dr. Garry (04:47):

And that, you know, means we have restrooms, including public restrooms, we have sewage systems, you know, those vary a lot around the, around the planet. You know, not everybody has the sophisticated sewage, you know, treatment plants and the like that, that we're used to in the United States, and you know, in, in, Western Europe and the like. Uh, you know, most countries actually, but you know, there are other places where, you know, it's, it's a little bit more informal. And so, um, in, in those places the virus actually has a, a much more, um, you know, a better opportunity to spread. And it's kind of ironic though, you know, the, the polio epidemics back in the, you know, back in the '40s and the '50s-

Diane (05:29):

Mm-hmm.

Dr. Garry (05:30):

... uh, primarily occurred because of these advanced, uh you know, sewage systems. People in other countries where polio was spreading easily got exposed to it earlier as, as children and developed an effective immune response. Whereas in the, you know, the more "advanced" countries, where, you know, the, you know, the, the treatments of the sewage and, and the like was better, there weren't as many opportunities for the, uh, people to get exposed to the virus and so they got exposed to it as adults. And this is one of the diseases where if you get it as a child, it's likely to be, you know, a mild kind of illness, like, you know, we said, a, a gastrointestinal illness that a gets, you know, it gets, it ... you can spread it as a child, but you usually don't develop the, um, you know, the paralytic disease or the severe neurological consequences. If you get it as adult, uh, it ... you're much more likely than a child to develop these serious, uh you know, par- paralytic symptoms.

Diane (06:29):

Is that what's called the, uh, post-polio syndrome, or is that another branch on the same tree?

Dr. Garry (06:37):

No, it, it, um, you know, post-polio syndrome is another, um, manifestation of polio virus infection. But, it's, it's not, it's not the paralytic part initially.

Diane (06:48):

I see.

Dr. Garry (06:48):

Okay. What post-polio syndrome means is it, it's what it says, it's something that happens after you've developed polio and it's usually decades later, so 30 years, 40 years later after a person, you know, as a younger adult probably contracted polio, may have had, you know, the paralytic manifestations and then, you know, probably through, you know, through physical therapy and, and other, you know, just, you know, the healing naturally that your body can do may have actually gotten somewhat better, you know, may have, you know, gotten more use of their limbs or whatever and, you know, it doesn't always happened with polio, but, um, you know, there can be some improvement, just, you know, you learn to train other muscles and the like.

Dr. Garry (07:35):

The unfortunate thing about post-polio syndrome is, is that in a lot of individuals, and it's about 25 percent of people that survived the polio, the paralytic polio, they will develop this post-polio syndrome. And that means that the, the symptoms of the disease basically come back. So if you were p- say paralyzed in your lower limbs, then ... and ... but, you know, through physical therapy and, and natural healing and the like, you, you may have developed, you know, you may have gotten a little stronger there. Uh, unfortunately with the post-polio syndrome, the, the paralytic manifestations come back, you know and-

Diane (08:11):

Hm.

Dr. Garry (08:12):

... you know, and, and they come back in force. And it's, it's ... people don't really understand this syndrome very well 'cause it is, you know, actually somewhat rare. Um, but, uh, it, it does happen and, uh you know, people have tried to, uh, isolate virus from people with post-polio syndrome, isolate polio virus. It's not that the virus has hung around. It's some other, you know, physiological manifestation, you know uh, just having had the paralytic disease, maybe recovered from it, and maybe there's a finite capacity, uh, in the, you know, in the muscles and the nerves to regenerate like that, and so eventually that kinda runs out and then you get this, you know, post-polio syndrome, which is ... it's very tragic.

Clay (08:56):

Well, doc, let's go back several years ago, the late 40s', early '50s polio caused such fear across the country, let's go back to that time. Talk about what it was like then from your research on polio.

Dr. Garry (09:10):

Mm-hmm. Well, um, you know, I'm, um, a little bit older as a virologist, but I, I don't remember it personally-

Clay (09:18):

(laughs)

Dr. Garry (09:18):

... but from what I'm told-

Clay (09:20):

Yes, yes. (laughs)

Dr. Garry (09:22):

... you know, I mean I was a young child in the '50, right?

Clay (09:24):

Yeah.

Dr. Garry (09:25):

So, um, but you know, there was a lot of consternation. People wouldn't send their, their children to swimming pools and the like, public swimming pool because that was where you got polio, right? Remember it's a gastrointestinal illness, so-

Clay (09:39):

Yeah.

Dr. Garry (09:40):

... you know, if you're sharing water with people in a swimming pool, that's where, that's one place where the virus, um, can spread. So it, it was, it was fearsome. I mean, you know, we've ... um, you know, nobody wants to have their child come down with a paralytic disease and, and possibly die from it. And the paralysis can actually affect the lungs to, the diaphragm and, uh, so there were things, uh, called Iron Lungs that were built to actually help people that had contracted polio in this one particular manifestation with the diaphragm being affected and they couldn't breathe and this, these iron lungs helped the people, uh, to breathe. And there were actually wards in cities all across, you know, the United States and Europe that were filled with these Iron Lung machines.

Dr. Garry (10:26):

Um, and so, um, you know, that was, you know, what, I mean I do remember my mother telling me about that, and you know, "Why can't we go swimming to the, you know, to the pool?" And it's because of, you know, people were worried about contracting, uh, polio.

Clay (10:43):

It's interesting because when you talk about that time in our country's history where there was the absence of technology that we have today, specifically technology that allows us to communicate information, now it, it should make it a lot easier or at I- or, uh, let me say, less difficult to get information to the public about polio or any other type of virus, uh, that the public should be aware of, correct?

Dr. Garry (11:08):

It should be, yes. And, and so, um, you know, and we have other technologies too, like we can test for the viruses using advanced technologies like PCR and, uh, and ... w- which are incredibly sensitive, and this is how people have been able to sort of detect polio and the spread of it, you know, through the wastewater. And you know, I think you've seen some news articles recently about, um, polio showing up in, in sewage, uh, wastewater treatment plants in London and in the, and more recently in the United States. Um, and there was actually a case of paralytic polio in, in New York, um, over the summer, which is probably why we're talking about it here on this, on this, uh,

particular, uh, podcast, uh, 'cause it does get everybody's attention. Polio was thought to be eradicated.

Clay (12:00):

Mm-hmm.

Dr. Garry (12:02):

At least in, in the West. And, uh, you know, here we have a case and you know, one case means that there were probably a lot of other people that had been infected.

Diane (12:12):

Let's talk about the vaccines. Thankfully, thankfully, we've had vaccines almost to the point of eradication, but again, kind of rearing its ugly head here in recent terms as far as polio's concerned.

Dr. Garry (12:25):

Yes.

Diane (12:25):

Uh, Doctor Jonas Salk and Doctor Albert Sabin, can we talk about those two, um, vaccines, please?

Dr. Garry (12:31):

Sure, uh, absolutely. And so, um, it actually turns out, (laughs) that the more recent cases of polio in the West are actually viruses that are derived from the vaccines.

Diane (12:45):

Oh.

Dr. Garry (12:45):

So that is, uh, you know, that is kind of a, a consequence of our technology. You know, the vaccines have been amazing. They've eliminated polio in most, you know, most countries in the world and you know, it's why we don't really think about it much anymore. But, um, the cases that we are seeing now, at least in the West, uh, are, are all these vaccine-derived polio cases.

Dr. Garry (13:09):

So I'll tell you a little bit more about it. You have to step back a little bit. There are actually two, uh, polio vaccines. And the first one was this what we call live-attenuated vaccine, vaccine by, by Albert Sabin. Okay. And, and Sabin is a very, um, famous virologist. He created this vaccine. And what this, uh, oral vaccine is, is actually an attenuated, uh, virus. Okay, so it's b-, it's been passaged, uh in animals in cell culture and it's picked up some mutations that make the virus no longer able to, um, cause the paralytic disease. So the virus can replicate in your gut, in the gastrointestinal tract, but it doesn't have the capacity to escape the, the gut and, and invade your, uh, spinal cord or your brain. So that's, that's the Sabin vaccine and it's a very effective vaccine, it's easy to deliver, um, and it was the primary vaccine that was used in the long ... for a long time in the United States. It's also currently used, uh, in countries around the world, uh, that you know, still are having polio cases because it's easy to deliver.

Dr. Garry (14:22):

Um, I remember as a child getting it. It was put on a sugar cube.

Diane (14:26):

Mm-hmm.

Dr. Garry (14:27):

And you know, you had to go and, and take this sugar cube, which, you know, no kid is gonna really turn that down really, right?

Diane (14:33):

(laughs) Right.

Dr. Garry (14:34):

And so, uh, it was given about four times and, um you know, and you became very immune to, um, you know, to, to polio virus. But the problem with the, um, the oral vaccine is, is that, uh, it can reverse mutate, okay? And you know, even though it's been selected and, um, you know, and, and, and is no longer able to cause, um, the paralytic disease, uh, it can revert into a virus that is capable of spreading easily and also causing, um paralytic, paralytic disease. So, um, the, the reason there's, there's another type of polio vaccine, um, that is, um, a, um, an inactivated vaccine, okay, and, and this vaccine, um, is, um, able to, um, prevent infection but it's not able to replicate. So it's ... it has to be given by an injection and it's not quite as easy to deliver, which is why, you know, people at the World Health Organization and other places that are trying to eradicate polio, um you know, tend to go with the oral vaccine, the live vaccine. Um, but it's the vaccine that, that most Western countries like the United States have adopted, um, more recently.

Dr. Garry (15:57):

So you still need to get four inoculations of the, of the vaccine to give you the complete protection, but there's not the possibility that the virus is gonna mutate, reverse mutate-

Diane (16:08):

Mm-hmm.

Dr. Garry (16:08):

... and become a paralytic virus. So, um, you know, those, those are the two, you know, the to vaccines that are, you know, that are primarily used, um, around the world. And like I said, the ones that we use mostly in the US are the, are the inactivated vaccines.

Diane (16:27):

Do you still get polio vaccines these days? Is it something-

Dr. Garry (16:31):

Mm-hmm. Yeah.

Diane (16:31):

Okay. I didn't know that. All right.

Dr. Garry (16:33):

Yeah. Yeah.

Diane (16:33):

And that's part of the childhood, the childhood-

Dr. Garry (16:33):

Part of the child immunizations.

Diane (16:37):

Um, schedule. Okay.

Dr. Garry (16:39):

Actually, uh, uh, uh, a common way that it's done now, there's something called a pentavalent vaccine that includes the polio vaccine but, but some other, you know, viruses in there too like for diphtheria, tetanus, and pertussis, so um, you know, that's a ... it's a more complicated vaccine, but you kinda get all your protections at once with that.

Diane (17:00):

Mm-hmm. You know, we hear so much anymore, well in the past couple of years about, uh, booster for this, booster for that, do you have to have a polio booster? Is there such a thing?

Dr. Garry (17:10):

Well, it takes four, it takes four doses of it.

Diane (17:12):

Okay. So technically-

Dr. Garry (17:15):

So [inaudible 00:17:15] each, yes.

Diane (17:16):

Oh.

Dr. Garry (17:16):

So for both of them, the oral one and for the inactivated p- polio vaccine, so yeah, you, you need, you need boosters (laughs).

Diane (17:23):

Okay.

Clay (17:25):

How did the public react in general to the development of this vaccine?

Dr. Garry (17:32):

Well, it was, it was remarkable. I mean there were, uh, you know, um, Professor Sabin was put on the cover of Time Magazine and treated like a hero and-

Diane (17:44):

Mm-hmm.

Dr. Garry (17:44):

... um, you know, and it was really a remarkable thing. I mean it shows you what science can do. Right? You can, you know, basically take a, a virus that was, you know, causing rampant, you know, so- societal disruption and you know, a, a lot of death and, and, uh you know, paralytic disease and other things, and then just, you know, with, with the vaccine basically drop the number of cases down, you know, to, to practically nothing.

Clay (18:12):

Wow. And it's amazing because you think about the, the (laughs) the brain, uh, and, and intellect that was put into developing this thing and for the public, the relief that must have been spread-

Diane (18:24):

Hm.

Clay (18:24):

... across the nation as people realized they had something to defend their children against this thing.

Dr. Garry (18:30):

Yeah, absolutely. Um, you know, I mean, it, it, it was a relief (laughs) uh, with you know, polio being basically eradicated in, in the West. I mean there's still places around the world that, that obviously have, you know, wild polio cases, uh, India, Pakistan, Nigeria, uh, you know, still, you know, have, you know, various numbers of cases. There, there are still a lot of, you know, these vaccine-associated polio cases where the virus reverts. But you know, with the use of, you know, inactivated vaccine in the West, those, those are rare.

Dr. Garry (19:06):

Now that, that's why, you know the virus showing up in sewer systems, uh, has been such a, um, you know, concern for public health officials in places like London and in New York City and the like and why, why polio is back on the radar screen. Again, because apparently, you know, paralytic polio is, is circulating in, you know, in various places around the planet again.

Diane (19:30):

And again, you said it was so very highly contagious and when one case shows up that means that there are many more behind the scenes. What are the treatments? I, I don't believe it's curable. Is that right? Are there treatments available for this or ...?

Dr. Garry (19:48):

Uh, now we can prevent it, but you know, once the, once the virus gets in the central nervous system, it's very hard to, um, to, um, get it out of there. And there are no specific anti-polio drugs.

Diane (20:00):

Mm-hmm.

Dr. Garry (20:00):

I mean, you know, maybe we could have developed them, but, you know, we got a very effective, you know, prevention so it kinda stopped the scientific development of those, um you know, anti-virals against polio. Anti-virals are hard.

Clay (20:15):

Is the vaccine that we're using now to deal with polio the same as the original one or has it evolved over the last 50 years?

Dr. Garry (20:25):

Uh, you know, they've, they've tweaked it a little bit. I mean it, it does have some en- en- enhanced potency, um, compared to the original ones that were, were developed. But, um, you know, it's, it's, uh, it's, it's pretty much the same.

Diane (20:40):

And I do think that since we don't hear about polio as much, obviously we do, we have in recent, the recent past, because of new cases in ... as you said, in, in London and in New York, I think people are of the, I don't know, misconception that it's no longer something that we even need to consider, so they kinda put it on the back burner and I think sometimes there's a danger to that.

Clay (21:06):

Mm-hmm.

Diane (21:06):

When you're not thinking of something in the forefront of your brain, that you kinda rest of your laurels. And we've got to be careful just because we're so close-

Clay (21:15):

Right.

Diane (21:15):

... to that eradication. It is still alive and well in different parts of the world. Could you speak a little bit about that, Doctor?

Dr. Garry (21:24):

Well, I mean in, in 2020, which was, you know, at the beginning of the COVID-19 pandemic, there were, uh, I believe over 4,000 cases of, of polio worldwide. And that, that, that got people's attention, right? That was a, a much higher than, than people were used to seeing. Now that number's

dropped down considerably over the past uh you know, couple of years. Um, you know, it's down to about 400 cases I believe, uh, last year and there've only been a couple hun- hundred ... there've been about ... over, little over 100 cases, uh, this year in 2022. So those numbers are coming down.

Dr. Garry (22:00):

Uh, but you know, public health officials are still very cognizant of the fact that, that polio's a threat. And um, you know, obviously, the severe manifestations, the paralytic disease, is something that you don't want to see showing up in your population. So, the fact that the virus is circulating and, you know, and can be detected in, in the, you know, the sewers of London and sewers of New York City-

Diane (22:22):

Mm-hmm.

Dr. Garry (22:23):

... uh, is still a, still a concern. And it's, uh, it's still be monitored and you know, people are gonna, um, uh, you know, respond to that. You know, uh, a lot of ... As you mentioned, we still have the polio vaccines, but the use of the vaccines, uh, of the polio vaccines in particular has dropped off quite a bit. So there are c- campaigns, uh, in Europe and, um, and in certain places in the United States where vaccine ... the polio vaccine usage has dropped off. It's, it's very low in say California, down to under 40%. And so there have been campaigns started there to say, "Hey, look, we need to, you know, be giving our children these vaccines, 'cause we don't want to, um, you know, have a resurgence of this, you know, once terrifying disease."

Diane (23:08):

Mm-hmm. Kind of like that out of sight, out of mind.

Clay (23:11):

Right.

Diane (23:11):

You don't really think about it. And I, and I do know that when I was a youngster as well, we heard so much with the polio, about the March of Dimes. The March of Dimes, that was that huge campaign and-

Clay (23:22):

Mm-hmm.

Diane (23:22):

... it's gone on for a number of years to raise so much money for research and for vaccines I believe.

Dr. Garry (23:29):

It, it, it was started and you know, that ... the, the March of Dimes campaign was actually what was the progenitor of our National Institutes of Health.

Diane (23:38):

Oh.

Dr. Garry (23:38):

And so a lot of that, you know that research has been taken over by, by our National Institutes of Health, which has given us, you know, these, you know, these sort of almost miraculous vaccines against SARS COV-2, the virus that causes COVID-19 and, uh you know, so many other important advances. So, yeah, it was an opportunity. I mean people, you know, people saw the power of the scientific enterprise, you know, back when, you know, when the, the polio vaccines started in the '50s and that, that said, "Look, you know, lots of things are possible. We can improve the human condition, uh, through science."

Clay (24:18):

Amazing. And kids are still required, or are they required to have the vaccine for polio before going to school?

Dr. Garry (24:26):

You know, in some, in some states it is a requirement. Um, I'm not sure how much it's enforced. In other states, um you know, it is become not a requirement. You know, people have said, "Look, you know, I want to be able to make my own choices and, uh, about, you know, what I put into my body," which is kinda understandable, but you know, vaccines are kind of a special thing. Right? I mean you know, it's not that you're just protecting yourself. In fact, what you're protecting with vaccines are the whole population. So if you, if you, you know, say "Okay, I'm, uh, selfishly I'm not going to get this vaccine," uh you know, you're actually not just putting yourself at risk, but you're putting others at risk too. So, we, we need to think a little bit differently about vaccines than we think about other kinds of medical interventions. We're, we're really, you know, kinda protecting not just ourselves but, you know, our family members and, and people that might be more, um, susceptible and more likely to develop more serious consequence of an illness.

Diane (25:30):

And just because we don't hear, as you said, about the polio and the instances like we, like it was so rampant, or so unfortunate probably's a better word back in the '40s and '50s, it doesn't mean that this is one that has been eradicated, at least not yet. And back the public consciousness as well in the '40's you had an American president with FDR that had polio-

Clay (25:53):

Right.

Diane (25:53):

... and had the braces and he was with the warm water therapy in Warm Springs, Georgia. And I believe that there's, uh, there's still a foundation there in Georgia. I want to say that there was, I read about it a while back, that, that, yep, that people with polio can go there and have treatment as such, but it's a ... It, it was, it was talked about, but as Clay pointed out, obviously with social media and the ac-

Clay (26:19):

Sure.

Diane (26:19):

... the access to being able to have more of a conversation it wasn't as much then, but people did know that-

Clay (26:26):
Right.

Diane (26:27):
... about FDR and the polio. And when you see a man, oh my gosh, and a president-

Clay (26:31):
Mm-hmm.

Diane (26:32):
... the children, it was, it was really a red flag. It was just, it was heart-wrenching to have any cases.

Dr. Garry (26:38):
Yeah, yeah. And FDR didn't allow himself to be, you know, photographed very often-

Diane (26:43):
C- Correct, yeah.

Dr. Garry (26:44):
... in his wheelchair until, til late, late in his second or maybe it was his-

Diane (26:48):
Third or fourth term. Yeah.

Dr. Garry (26:50):
[inaudible 00:26:50] yeah, something like that. (laughs)

Diane (26:50):
Mm-hmm.

Dr. Garry (26:53):
So, uh, so you know, a lot of people didn't, didn't know that he was operating so eff- effectively as the president even with this, you know, very serious physical impairment.

Diane (27:01):
Mm-hmm.

Dr. Garry (27:01):
But, um, I, I think he did a lot for, you know, advancing science and, and the like. And you know, his courage and everything was important that people could see that you can do things as a physically disabled person.

Diane (27:18):

Absolutely.

Clay (27:19):

You know, it's interesting, uh, uh and Diane referenced it a, a moment ago, people may not think polio is a thing anymore and so they, they're not really motivated to become vaccinated. Does that create a situation for us if over p- long periods of time, fewer and p- fewer people are getting vaccinated?

Dr. Garry (27:37):

Well, that's what people are worried about and that's why you know, finding the virus in, in, in the sewer systems. You know, I think that they have tested like 70 positive samples in New York, in the New York City area over the past, you know, several months. So the virus is out there.

Clay (27:51):

Wow.

Dr. Garry (27:52):

And it continues to circulate and you know, it, it caused the paralytic disease in one unfortunate person, uh, back over the summer and, um, you know, we just hope that, you know, it doesn't have the opportunity to, to spread more widely or get into a population of people in the United States that are, you know, have very low levels, uh, very low coverage of the vaccine. And, uh you know, we could see a lot more cases and that'd just be a tragic thing.

Diane (28:21):

It certainly would. And that's why the opportunity like we're having today, uh, Doctor, with this podcast, with this conversation and this platform, to let people know it's, it's still out there. You know, be aware. Don't be scared, just be aware and be alert about what's happening. As, as we're kinda coming to the end of our time, is there anything that you can think of that we have not covered that you would like to have our, our listeners be aware of or maybe, you know, some ... a thought to leave them with today as they're ... as we're wrapping up our podcast?

Dr. Garry (28:56):

Yeah. Well just, for the parents out there mostly who are, you know, thinking about, "Am I going to get my child this vaccine or not? Uh, I want to withhold it," I mean, give that really serious thought because you know, like you said, polio's still out there. It's still a threat and, you know, if we get enough people vaccinated, we can, you know, basically move that threat down to zero. If we, you know, are going to make the choice, "Okay, I'm not going to let my child get vaccinated," you know, then we'll, and then we'll be at risk and they'll be cases of paralytic polio and you know, it's something that we can prevent.

Diane (29:30):

And I believe our goal is to say, "Polio is eradicated."

Dr. Garry (29:32):

Exactly.

Diane (29:34):

How fabulous would that be to say that it is eradicated?

Clay (29:37):

Right.

Diane (29:38):

Dr. Garry, thank you so much for your time and for giving us, uh, so much information that we do need to know. It is a topic that has had so much history and we need to be brought up to date. And thank you to our listeners for tuning in today to this episode of Vax Matters.