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TRANSCRIPT - GR 09 09 22 “Polio in NYC: the view from the WHO”– William Petri, MD PhD from the University of Virginia

- Welcome everyone.
- 00:08:04 So we will get started. Um,
- 00:08:24 Member of the Strand University Micro Mile Initiative of the neuroscience of graduate program faculty member of the Corner Immunology Center and vice-chair for research to the front of the medicine
- 00:08:36 and The
- 00:08:38 those of you in the room are on Zoom,
- 00:08:42 and you have so much for the interns and how fond memories the work! Because you're at the Research Center. You're attending your instructor,
- 00:08:50 and perhaps even a patient to yourself. You've been here since one thousand nine hundred and eighty eight.
- 00:08:54 He has worked Um! How you're eligible for the University. He Don't meet his ndp at the University of Virginia and the Presidency in Toronto Medicine Case, Western University. It's a fellowship back here of Europe.
- 00:09:11 He is a prolific researcher. He has well, over six hundred publications. He's read many book chapters. He's been revealed. I think that I worked as one of the country's top nih funding scientists.
- 00:09:28 That was that in two thousand and eight using the top twenty list. He is ah one of the only cvs I've read that had a much-needed table of contents at the beginning
- 00:09:40 in his lab after featuring science in terms of the developing world molecular psychology and hopes, the senses of particular focus on frustrating.
- 00:09:55 He is a recipient of dozens of this national and
- 00:09:59 state awards, including the Thomas Jefferson, award for scholarship. The Maxwell Finland award for scientific achievement. The Nih is married, award the ideas of all the in real world.
- 00:10:11 The previous outstanding scientist award gets this presented to him by the Governor himself, and though many other, so he is a member of the Raid and Society.
- 00:10:22 I wonder if I put Google that's going to be cheaper. But you can. It's the oldest about the prestigious.
- 00:10:37 We can spend a long time talking about It's accomplishments, but uh, I think at you start to watch,
- 00:10:45 so I don't know what to do.
- 00:10:47 I'm a doctor, so he tree not just about polynomials.
- 00:11:06 And I do this uh
- 00:11:08 with our staff. It's like my most fun, and you really need to make it too bad. So thank you. Um! And I am uh sort of in charge of researching department of medicine. And so
- 00:11:22 whoever like the chat, I mean that that's right. Get here. During my heart. I mean nothing more important than having physicians doing research, because, you see, the
- 00:11:50 and this is a fun topic for me, because for years I've been involved in a way of research in Bangladesh, and the last several years I've been sharing with the
- 00:12:06 It's a look at. Where are we with sort of eradication going on where the research means that it's a nice

- 00:12:37or what I've learned can. I have like no financial conflicts of interest trying to maybe talk about today.
- 00:12:45I'm learning an occasion here today, but i'll. I'll tell you about it a twenty, two year old. Ah male, and really with no you didn't get past me with his and my days prior to editioning that fever's next stiffness
- 00:13:00that's a download in the transportation.
- 00:13:03And then she days prior to the issues that are developing by that or lower,
- 00:13:15and, as we all know, the
- 00:13:44and they were actually able to sequence polio virus type, two from this tool of the patient, about eleven days into the illness and the sequence
- 00:13:56that this was actually derived from the type, two viruses and the statement of live polio vaccine.
- 00:14:20And we do that.
- 00:14:21Step back and then take you through the history of

Unknown Speaker

00:14:26we are.

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00:14:27It's first described in ancient Egypt,

- 00:14:32and this modern description is by Michael underworld. What is one thousand nine hundred and seventy eight, nine is the ability to lower extremities,
- 00:14:50and most notably one thousand nine hundred and fifty two. It's the first year in the Us. They have the eight thousand cases, three thousand deaths and twenty one thousand children. Paralysis
- 00:15:04I appreciate, like the withered rang there of this priest
- 00:15:13jumping a few thousand years. They had Rutland. Vermont had a population of about like six thousand people when polio came there, and that was one hundred and thirty two days the work was enormous.
- 00:15:26These uh epidemics were always in the summer time. Uh, the sudden description is in one case a three-year-old white was healthy, Active and Strong is described by his supposition, became February, Frankie Stomach Day that he lost the use of his legs.
- 00:15:55It's from these,
- 00:15:57and a third child does come to the infection, all, for example, re stories, and then with the infection more common in boys and girls and other women.
- 00:16:09And then it's interesting that it happens in the Us. That we don't totally understand is that there is a shift
- 00:16:15of terrorite cases. Um, and that's what it's been. A sporadic infection between epidemics every summer part of the thought process we don't know if this is true or not. This is that um with better sanitation people, we're getting infected, and perhaps the immune system.
- 00:17:02And you know there's one of these iron,
- 00:17:18maybe, like the most famous case of paralysis, which was Fdr.
- 00:17:26This shows you what was going on in the
- 00:17:29Us.
- 00:17:31From one thousand nine hundred and ten to one thousand nine hundred and fifty-four Inc. Events. And because, of course, that's, when the stock vaccine was released, was in like fifty-five. You can see that the solid line is cases of paralysis, and then the dotted line is

- 00:17:50and so this you know dramatic increases every year after World War two. But my late mother was a wonderful storyteller.
- 00:17:59All sorts of stories about her growing up on it.
- 00:18:01Gary farming
- 00:18:03uh outside of province, but uh, one of the stories she called us was about how, as a child and the
- 00:18:11the theatre thing was a swimming pool because of the

Unknown Speaker

00:18:15outbreaks in in Rhode Island.

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00:18:18You know it is a child that was like totally unmatched to me that we would ever have, you know, infectious disease. Epidemics like that so change they really want.

- 00:18:29So So what to do
- 00:18:32about this problem? And really the laboratory research was the answer.
- 00:18:41Jean Macamara and Mcfarlane, Burnett and both Australians, Some scientists, and they discovered polio learn in one thousand nine hundred and thirty. One,
- 00:18:51you know, viruses are unusual. They're so identified.
- 00:18:55They look like in the microscope, and this is a transmission
- 00:19:00uh a native stain electron micrograph or portfolio of our. Since then encapsulated with a protein shell. Rna vaccine. So it's It's similar to one of ours is that it's positive,
- 00:19:19and the mutations that were required in the virus that this person got in New York City are in one of those absent proteins. And so we think that that's important, not only for its ability to cause that transmission, but also to the
- 00:19:37but that's the virus. So Thomas Weller and Frederick Robbins, who are the junior,
- 00:19:53a good thing that the senior Investigator might be, You know, a lot of credit to well, or and that robins. So this is one thousand nine hundred and forty eight.
- 00:20:03And so this is. This is like like speed for vaccine development, because by one thousand nine hundred and fifty-five, Jonas saw the
- 00:20:18just like. We need today for the food vaccine to take the virus and inactivate it.
- 00:20:24And there's a really heroic study of over a million children in the Us. Who either were vaccinated or received placebo,
- 00:20:32you know, like the coronavirus vaccines, you know, today we're best to like fifty thousand individual, because the brain was so high. It's much harder to do a polio vaccine study, because you didn't know we're
- 00:20:52so. A million children enrolled seven years after the virus's first culture, and the very first effective vaccine.
- 00:21:03This is a turning point in the support by the Us. Public service for Ni to for biomedic and research
- 00:21:11in general. You know, I think my mother realized that my child is no longer at risk for this paralytic infection every day of pandemics or epidemics every summer. Um! So that was the soft vaccine in activated
- 00:21:30that virus. And that's what we use today in the Us. Is our we're talking about free organizations by the first year of Why, there's another thought.
- 00:21:38I'm going to um,
- 00:21:40And then as results. If you're traveling to another poly endemic area, you should get like one.

Unknown Speaker

00:21:49Yeah,

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00:21:51but um!

- 00:22:11The virus made it not more imperial, and then these are like the sugar tubes or the problems that I personally took from us. The People's room were born, the line when it was so used in the Us. And then the virus actually replicates in your intestine.
- 00:22:29It's a virulent, so there's no symptoms from that. But you get very, very robust in your response.
- 00:22:36This just shows you how to even
- 00:22:38attenuated the virus. And this is important that that attenuated virus reverted, that the cost paralysis. And
- 00:22:48all right. Everyone, too, can't say, but the middle one is showing. Uh, what about how a saving? I choose three different kinds of poly. Where is one to create the bill diagram and showing you how the type two virus was attenuated, and then it was put in an animal cell called.
- 00:23:07Then you pick the flash to You know Clones a virus that have been passage three times
- 00:23:14when you go a chimpanzee, and then you.
- 00:23:23It was back then that there was a distinguished thing. If they knew that it couldn't, cause there a lot of
- 00:23:32what we know today is that for them in the parameters there's only two nuclei mutations that differentiate it from a while ago. So it's.
- 00:23:44This could happen to this person in New York State that the virus was only two changes in that sequence, but they've never worked to be
- 00:23:55so. Why on earth ever use like the same in the world? Polio vaccine? Why is it so big used
- 00:24:01throughout the world if I wanted to put this person around. So our experience in the Us. Is the same experiences around the world right now, since well, eradication is going on if the soft vaccine fails to eradicate the disease, And as a savings do. I want to do that?
- 00:24:20I'm going to show you some data here and we're looking at the number of cases of parallelic polio in the I in space going on with the y-axis, so it's a long scale.
- 00:24:33It's out
- 00:24:34this year, on average.
- 00:24:39And then what was the reading here? I was showing you when the song vaccine became released in one thousand nine hundred and fifty, five. You see there's a precipitous decline in cases of paralysis.
- 00:24:51You have two orders of magnitude from one to ten thousand cases down to ten to one hundred.
- 00:24:59But then what happened after that time, until the same, the vaccine came out. We were having ten hundred and twenty cases of carolinic folio in the Us. Every year, even though vaccine up tape was great.
- 00:25:15And so when the same indexing came out, then we eradicated folio from North America.
- 00:25:24So why is that so? What is it about the state of mind? Virus vaccine? That is better in unity? Um. And this is like this: next slide. Actually, my favorite slide is at the house. Let me know, because this is what defined because of the mean policy. It was Nero Ray at the University of buffalo.
- 00:25:41Exactly what's going on. I mean, what line would one that be
- 00:25:53so? This is like one thousand nine hundred and sixty, eight,
- 00:25:56I think that was like sixth grade, or something like this, but I got to be,
- 00:26:13and then we measured in serum,

- 00:26:17the uh,
- 00:26:18the antibody being produced against the only of the virus. And then those are the top graphs there. It's really going to have antibiotic titers. On the Y-axis and days that I'm on the X-axis
- 00:26:31but you can see that you compare the soft and the saving vaccines. They're both perfectly good at making these eye-fighter neutralizing antibodies in the class. But that is what protect you from being
- 00:26:42that is absolutely terrified. But what the saving vaccine does, that the slop doesn't is making it a response to the
- 00:27:01that salt is not
- 00:27:04so. Once the saving vaccine was reduced in the Us. Then we had immunity as a testal infection that the disease could be eradicated,
- 00:27:14and that's the good thing about the statement. But then, of course, that what we're experiencing in New York City with the subordinate that is the problem is that they can rarely revert back to neuro bureaucrats and the world of polio vaccine. So it's live attenuated
- 00:27:33you. You referred it. It's less than one out of a million uh children that's vaccinated as uh experiences like uh, you know what's called a vaccine associated, developing all the other groups. So this is about
- 00:27:48two hundred and five hundred cases a year. This is actually um! It's way more than the cases of paralympic folio in the world today. Today there's about in the last year there's been about a dozen cases of parallel to the wild virus, whereas there's a hundreds from this the of
- 00:28:09and when they report in your work not only to be more nervous, but also to
- 00:28:17again. It's sort of like common things like that we're seeing with, you know, Ba. Four point six right now, which is beginning to outstrip the A. Four and five, because it's more transmissible, the same.
- 00:28:28The thing here is that these reverted. Viruses are better than spreading person,
- 00:28:34but the same that vaccine was really kind of like the jelly of the club, they kept on giving it because it didn't just vaccinate the child.
- 00:28:46You had a vaccine in the entire household for the saving vaccine that you excrete the live vaccine only a virus for three days at the
- 00:28:56So what happens is that everyone in the household is exposed to the virus um. But then during that three-week period, or This is like an indo-efficient child that you've immunized over months. That virus has the opportunity to you take
- 00:29:15and I can't think of any reason why we want to be you. You can't see why it's It's going to have genetic selection for better and disability.
- 00:29:26They're like the case of New York City, where you have a virus that they were spread in an area like they're really young.
- 00:29:37Uh, you know.
- 00:29:39There's a lot of problems with people or all you know, spread or sports annotation.
- 00:29:46So
- 00:29:47then, we have this problem with a saving vaccine causing vaccine associated
- 00:29:54here like polio or map. So what this is showing you is like from the number of pure like folio cases on the y-axis in year from one thousand nine hundred and sixty one when the savings
- 00:30:06vaccine was first used, and the and the bars, the black bars are cases of vaccine associated paralytic Korea, whereas the line that's above them is, it's the total case of the prowl system, so you can sort of see like um
- 00:30:23Um, thanks. When I started Medical school here in one thousand nine hundred and seventy six. You could sort of see that almost all of the paralytic cases of only the Us. Were due to what happened to this man or a city, where
- 00:30:38well, that went on for almost twenty years. And so the decision is finally being able to stop using the saving vaccine, the Us. And only use the inactive. So since two thousand.

- 00:30:50 But we haven't used like a polio vaccine um in the Us. So that so? So? What on earth is this? First in New York City.
- 00:30:59 Let's get infected with a virus that came from the state of vaccine. So I want to take another step back and tell you about the quality of eradication initiative. It's like a really amazing
- 00:31:16 activity that's been supported by the Rotary Club in the Us. By the build. The Linux case foundation by who? Cdc unicef huge effort to radiate from the world.
- 00:31:31 And an important part of that, There's a global polio laboratory network that that the Cdc. Is set up, so that in each country like an Indians, and there's a lab that can take stool for a case of a huge class of Myelias and culture out of the polio virus identify where polio is happening,
- 00:31:54 and it's a very good news story.
- 00:31:59 The extended while folio two and three have been completely eradicated for the world. We're only dealing with wildfolio, one
- 00:32:06 now, and it's only endemic in two countries in the world that's circled there that that's up Afghanistan and Pakistan,
- 00:32:15 and if there's any good that's it's coming out of the Taliban
- 00:32:20 now governing. Yes, as the country is now open for childhood immunization. So I think there's a lot of they're going to do much better uh with the childhood Indian station there, you know. There's also some red dots in most empty in Malawi, there in Southern Africa, and this is an unfortunate occurrence of importation
- 00:32:41 from Pakistan um wild polio. So there's been about a half dozen cases there. So there's a whole. Another immunization campaign going on, because Africa that would be free of polio until about twelve months ago, when we're a while.
- 00:33:00 But that's not what happened in New York City. Of course it was a um it's called circulating vaccine-driven polio virus um for cdp, and these are the green dots that you can see in the world today in the last twelve months. Green dogs, like you know, far outnumber
- 00:33:19 the red dots.
- 00:33:21 And so
- 00:33:22 what do we do about this? Because we need to use the saving world vaccine to keep high levels of,
- 00:33:34 you know, especially now with reintroduction of wildfolio and depos that the can allow it. But at the same time, when you use this vaccine that the virus is reverting, and you're causing more green dots on the map. So there's two things that are being done
- 00:33:51 right now to try to address that that problem, and by addressing that problem, Then hopefully, we're preventing what happened.
- 00:33:58 Yeah. So one thing is that a scientist is really pretty close to they. They understand that this will be change to the five l'm. End of the foliage
- 00:34:07 that allows them to revert back in their very mind to circulate. So they actually mutated that five prime end of the Coronavirus. So this can't do that as rebel this several um, or all your vaccine, and this has been supported almost entirely by the bill. When the Gates foundation.
- 00:34:27 This is all happening in September, because I think you probably most of us haven't heard anything about it. But you got the equivalent of the way
- 00:34:36 by the World Health Organization. There's almost a half billion children that have received this novel or a polio vaccine, and where campaigns have been conducted are the countries in blue
- 00:34:55 problems with the um surplus that came to ride polio to are now getting this novel.

Unknown Speaker

00:35:06 It's just that it outbreak

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00:35:08so far in half a million doses. It really is. It's not completely viewed, having reverse bars, but it's much, much, much better. So that's the first solution.

- 00:35:18The second solution is the that's strictly vaccine right? Poly virus, because immunizations have drop precipitously. Part of this is due to the pandemic part of it is due to the pandemic part of it is due to the pandemic part of it is to to
- 00:35:38but the fact that you see that in yellow and in the orange
- 00:35:43that's anywhere from like less than half of children receiving their tennis vaccine to, as well as one out of ten proceedings, because it's so. There there's major things that can be done, you know positively to prove vaccination of children, and I want to take a step back
- 00:36:01here. Even we have a portfolio to tell you about the expanded program on immunization, some that you may not have heard of, but this is the
- 00:36:11he was appointed to me part of the to be a director of unit staff in nineteen eighty, and he died in one thousand nine hundred and ninety-five
- 00:36:26to me as an example like. You know what one person truly does make a difference, and so that he realized that that probably countries weren't doing a very good job of doing the ice, and their children was actually in bond with ash
- 00:36:39Um! But nobody knew just how bad it was, so he said, Well, if you want to change something first. You've got to measure it. Yeah, how big is the problem? And so he did that. And he discovered that I'll show you in the vaccination levels, for example, like that tennis vaccine
- 00:36:58in one thousand nine hundred and eighty, when he started measuring twenty, fifty percent of children receiving the tennis vaccine
- 00:37:07and then fertile. It's terrible for child health. It's completely demoralizing for somebody like me to try and think like it,
- 00:37:12new vaccine against cryptos prettyiosis, because you know, if you're not using the tennis vaccine, What's the point Like they do the next thing. So um! So he measured that. So that's one important thing that the James Grant did to say what he said at all.
- 00:37:31It's set on an issue score of ninety percent of children getting their childhood organizations,
- 00:37:38and he said I'm through unicef the expanded programming organizations which you know Set those, you know, schedule for vaccines,
- 00:37:59vaccine now going out to universal immunization. The animal was been, I see. Vaccine.
- 00:38:18But it was one in person that said, Hey, Now let's figure. I just have had a problem. Now, what I'm going to do about it.
- 00:38:26But you know, unfortunately, everything that is backsliding, and the pandemic has been right bad for childhood vaccinations, especially in long, middle-income countries. I'm showing you I think this is Mos Nb.
- 00:38:36Data, and each of these little figures. It's a different vaccine that the middle one on the top is. It's in theory of ten that's perturbed from about eighty percent down to like the the low sixty percent, and it's kind of across the vaccines.
- 00:38:54So work to be done. But then is solution number two to prevent what happened in New York City,
- 00:39:04so that I might take this back down back to New York City to our Asia.
- 00:39:10You get a little bit of additional history of its present illness. So you had no international travel, and the preceding three weeks. We know that three weeks is the incubation period.
- 00:39:26We had attended a large gathering for our city. Thirteen days prior is that perhaps this is where female-oral transmission occurred with them.

- 00:39:37Um to think about the diagnosis of the Amino acid myelitis is a program of fever or a viral syndrome, and then weakness, you know, in a lower motor neuron pattern. So then, the most common
- 00:39:51and then the spine hemorrhage is actually It's wonderful to take the side. Do you guys? You can see the an here you are. More
- 00:40:00great matter of all
- 00:40:02is this: This is the cross-section of the spinal cord to show you on the top the the anterior horns in the gray there that are there where the motor neurons are, and these are the cells.
- 00:40:19This case of circulating vaccine derived.
- 00:40:23It's really
- 00:40:26Daisy, You can see this on Mrs.
- 00:40:31This Cross section and spinal cord. Here you can see the two anterior orange. Lay on this t two image, and then with this
- 00:40:41longitudinal image, I don't know if you need to see that this white
- 00:40:46density on t two in the anterior spinal cord, which is those about our neurons being infected with the
- 00:40:53This is not from this patient, but from another page
- 00:40:59you don't you. It's important to the differential.
- 00:41:02It's a huge flask of myelitis, and so folio and the Us. Um post infectious. And so we'll just get that history of like some of this. Get that history of white sense of viral, like syndrome
- 00:41:21two weeks, three weeks earlier, and then paralysis.
- 00:41:36So I sort of remember, like my little son, who's now in his thirties, when he was in grade, school was taking trumpet lessons for a friend of mine, and I would go over there, and I
- 00:41:51stop.
- 00:41:52My my my friend, can he says. Oh, you know my daughter, she's not able to like, get up properly Today we parted the pediatrician and something about it, and uh, I had her, you know, squad on the ground. She could not get up, and she had transfers violitus we never identified.
- 00:42:11Of course they were like steroid therapy, just for, like the Imperial therapy for transverse bylines, you can't. Really, it's a terrible illness, and thank witness that that we do have vaccines.
- 00:42:26So just a little bit more about this polio of ours. I'm almost at the very end. The key thing with public speed is going to be dry as well. It's almost over,
- 00:42:36but it's um
- 00:42:38coronavirus sequence um, as attended by changes in it. If you remember, it was only two. The way tight changes. It takes a while for layout to attenuate what it says. Ten. Then there that viral Gaussian protein,
- 00:42:53and they cause it to be her burial act, and also to be much more transparent. Just to think about like you know, a polio virus that's able to be transmitted in New York City. That's pretty incredible.
- 00:43:07Um! And you can actually figure out how long of the virus has been in circulation by the number of changes. So this has been out there for a year before this unfortunate person,
- 00:43:21and you wouldn't use someone you're like. Well, How is this happening? But it's like an aeroplane crashing. It's like three things that go wrong, all one, for if you're playing rational,
- 00:43:31you think about it in New York City.
- 00:43:33First of all, it's cosmic confidence. So there's travelers coming in from phenomenal countries that are introducing same inquiries into the environment every single day. So that's one things of how community Ah!
- 00:43:50And then number two, a mutation in the virus that makes it more transmissible than it is by its hygiene area. And then third was that we
- 00:44:06which would have protected him. And there's parts of New York City that have very, very low.
- 00:44:23So we need to like

- 00:44:24to the same thing like that Jim Graham was doing around the world, which is like to really, really improve our levels of vaccination with
- 00:44:33It's that this is a completely non-immune ovulation for being infected with the state of vaccine, and you have zero energy, although with ivb as a child you are
- 00:44:53so, anyway, there is like an Fm surveillance network. The Cdc runs just for this very reason. So they were involved, and it's not about those occasions like that. And to
- 00:45:08this is a Bmwr. A couple of weeks ago about this case through the she like that. The time scale. There is the onset of symptoms to stay zero, so may minus eight is where the tent is large,
- 00:45:24gathering. It's eleven days later that the I'm weakness develops and got the invasion. There is about three weeks,
- 00:45:31and he's admitted uh, thirteen days later that for two days the white might keep us um, and then the polio virus is identified, and he's discharged to a rehab this way, and I don't know how much of
- 00:45:48he has reacquired any of his lambs. I don't have that that follow up.
- 00:45:53So if you look at like um,
- 00:45:55I didn't like you were blocked in the Sally Blogs or Orange County left from
- 00:45:59from that area, but I just like to highlight it the month ago. So there is environmental detection of this this virus, or very closely related virus to both pros and then Orange counties. It's like, you know, fairly remote actually, from
- 00:46:15what I think in this university. And then This just shows you the little black on this identification of a polio virus in Rothland County
- 00:46:29or I'm in
- 00:46:33it doesn't happen for you,
- 00:46:34doing environmental surveillance all the way in the Us. They were doing environmental.
- 00:46:41And so, if they still have, like the Dna or a samples from the
- 00:47:00the city for like at least a week before this person became infected.
- 00:47:07So this led to like London and Israel doing wastewater surveillance, too. And I
- 00:47:14yeah, this is my second to last slide, and it turns out that the same virus across Browser. This span is also in circulation in London and Israel.
- 00:47:25So um
- 00:47:26it it. It probably doesn't really matter. Um uh, when we have a situation where we're only seven,
- 00:47:36so it's my last slides. I just think that I have some questions or comments or thoughts. Um. So
- 00:47:48okay, it's
- 00:47:50airlines to a virus from the Save and World vaccine because of the
- 00:48:03transmission is occurring. I'm sure. Each day. You know those three cities. There are probably other places
- 00:48:10because this virus was selected for natural selection to be more transmissible.
- 00:48:17It's An Ss.
- 00:48:19We have the entire developed world is not immune to the infected.
- 00:48:26But you know there's again like if it's this person and receive the childhood, I two hundred and thirty. That's page to say
- 00:48:33we wouldn't. They should know when this was going on. This has probably been going on below the surface like forever. You know We've been doing wastewater surveillance since two thousand. So
- 00:48:44and there's a real research need, a research opportunity which is to make an inactivated folio vaccine that gives me
- 00:48:59associate, professor in our group, that you inject vaccine intramuscularly and you get a new postal Ig response. So it should be possible to use it in the active vaccine and provide intestinal unity around this whole vicious cycle like use the more vaccine you use, but the saving vaccine to try to eradicate more vaccine.

- 00:49:24It's like a situation where you to get out of to like kind of complete What's going on with polio radically.
- 00:49:31It's it's so much fun. So I love any questions.
- 00:49:54It's like There's one thing on chat.
- 00:50:06Sorry about that.
- 00:50:44Yeah, this is the Then you got your figure out. The pulse of what we talked about with this.
- 00:50:51There's a group of people who say, Well, this is sort of like wasted resources like this: Billions of dollars in here is twenty percent of the Nhs budget is going to be.
- 00:51:02My take on It is, I think we're so close we've eliminated two out of three. We've got two countries that have endemic transmission right now. It would be like a shame to like not finish the job. But then you don't really like where the debate is right now. I mean, the reason will be proper slide to that,
- 00:51:24you know. I guess one of the nice things that you can combine polar eradication with, like, you know, surveillance for coronaviruses. And then, just basically you know, pushing childhood immunization in general through Api, not just like the or all your vaccine,
- 00:51:41but not a clear uh issue. Um!
- 00:51:45When I was like when I was a
- 00:51:47the medicine Resident,
- 00:52:00he said, like you would go to a country,
- 00:52:02you know they they're talking to them about the vaccines that we're going to provide for. Api, they said. When you met the Health Minister it was always like the least prominent person in the government, with the least resource that you want to.
- 00:52:16It was, like most prominent, most powerful was the defenseless because of even selling arms. You know he would have like that, and a much better reception, so that's a part of it as well. I think we? You know It's terrible. Countries that have like one for their children. They actually

Unknown Speaker

00:52:49okay.

UVA Internal Medicine

00:52:50Oh, it's a to Peter. I was asking for those of you that didn't hear like. What if we get an ice shaver's cods with the with the current? Mrna vaccine for Covid. Nineteen, with a great question. The answer is No

- 00:53:02uh, and that's
- 00:53:22thank you for that.

Unknown Speaker

00:53:23It is.

UVA Internal Medicine

00:53:24Yeah, they are. So there is work going on to make them.

- 00:53:30 Yeah, nothing that I know of it. It's in incredible trials right now, but that I may be prompted to get it. Yeah, I think it's a clear area of
- 00:53:42 um first type of comment. There is a line of thought that Fdr. Actually had von beret syndrome. So so someone who researches the hand of actor, I have to bring it up, because that would be the most common cause. I think the best of
- 00:53:59 retrospective analysis of its illness, and some of the
- 00:54:02 points, so that he had a symmetric weakness that was very slowly ascending. He got sensory involvement which would certainly be more prominent recovery, or really strongly misguided. He had a ball bladder upon it, and it was quite slow to resolve and resolve the descending pattern as well so
- 00:54:22 interesting. I don't think it's obviously a possible, said, But there's a thought, but maybe you don't. Thank you. Yeah, it's always good to be corrected. Thank you,

Unknown Speaker

00:54:31 you know, to stand up from the Campbell back through it. It's rolling.

UVA Internal Medicine

00:54:37 Yeah, I I mean, I guess we are just declared a state of emergency today. Um, obviously they're full. It's just probably about vacation rates for some way that, like we said, that's going to be with Ip. But is there a

- 00:54:49 Could there be an introduction of the novel, you know, stable opv in New York, and the second half of that question is there are
- 00:54:59 circulating vaccine-driven non-type ii Polioviruses is that novel type two virus vaccine ultimately going to be trivial.
- 00:55:09 Yeah, that question a little bit. So. Um, there's so much we got in New York City where we have a now circulating vaccine right quality bars,
- 00:55:20 and if this was most empty we would be doing what's called a ring immunization. And so every person in New York City and surrounding would be receiving like the oral save the vaccine.
- 00:55:34 And we're not doing that because we're probably going to correct more ham. I think that the novel on Tv has not been improved by the Iga, but improved by the World Health Organization, so that'd be like a major hurdle to using it. I think your second question is, Is there also a novel
- 00:55:54 for us, save that in for types one right three. And you're right. There are. There are some cases of of vaccine derive type. One I don't. I don't know there's any time free right now, but if that is under development of trials now, the same approach they have to do two things is they? They change the five prim on translated agent to prevent from mutating, and they also change the deliberates because they there are any memories,
- 00:56:23 swamps uh genomes with other Anroviruses that are in this in the stool at the same time, or they do a genome.
- 00:56:30 So you get it so it's a part, it makes it less. This person got the whole three time end of the Mars from some other end to the virus um. So which is having all the time, and like it, is well-income. Time to be like in a remarial effects, are incredibly more common there than they are here, and like this, we'll never know where this thing came from.
- 00:57:04 I'm. Here. Did you do any serological testing in this patient

Unknown Speaker

00:57:12for this to actually

UVA Internal Medicine

00:57:14Yeah, it's a peanut, but it's it's a it's a of insights here a lot. It's the the look previous response to infection. I don't know that that has been done,

- 00:57:24and it's, and it's not part of like our routine workout for a few class.
- 00:57:36One of the

Unknown Speaker

00:57:41the water, you know, in the waste water.

UVA Internal Medicine

00:57:53Oh, okay. So you guys

Unknown Speaker

00:58:34sixty-eight or lines of causes

UVA Internal Medicine

00:58:36reaching out to the pen.

Unknown Speaker

00:58:38All your

UVA Internal Medicine

00:58:40that that question at Cdc. You know, like instead of virology for Cdc, he said. Like, you know, the whole problem is like all the surveillance for a Fm. Is for the call of eradication,

- 00:58:54and so they just throw out all the other end of our system. So we don't have like the data on it, but it certainly could be that we're seeing cases of all we are causing a of them. But maybe like this. Yeah, my my friend's young daughter, that could have been
- 00:59:17So thanks for that comment. Now,
- 00:59:20now I have a patient. You mentioned your last point there that we enacted.

Unknown Speaker

00:59:27It would be kind of the Holy Grail.

UVA Internal Medicine

00:59:33Okay, and thanks to you. So um the polio. The radiation campaign has always suffered from the fact that you always think we're like a year away from eradicating. And so why spin, like

- 00:59:47all the money and the ears, to make the new vaccine seem quite connected, because it's going to be eradicated, and I for you. We've been saying that for like twenty years. So and you know There, there's so. I'm.
- 01:00:04This is not only a problem, but we're also seeing this importation while we owned Africa here, we haven't seen it for like ten years. So So things are not perfect for the replication. Maybe enough motivation they can get a better vaccine.

Unknown Speaker

01:00:19Thanks

UVA Internal Medicine

01:00:22Well, thank you for your attention. I mean, you're doing on awards every day, and so thank you.