Center for Strategic and International Studies

Pandemic Planet

Pandemic Planet: Intersecting Pandemics: Adrian Thomas of J&J on Tuberculosis (TB) & Covid-19

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FEATURING:
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Intro:

This is *Pandemic Planet*, the podcast, where we talk about the urgent help security threats facing the world, the geopolitical and societal challenges they present, and how the United States can best lead health security efforts abroad while protecting Americans at home. *Pandemic Planet* is the podcast series of the CSIS Commission on Strengthening America's Health Security. While our sister podcast series *Coronavirus Crisis Update* focuses on what's happening in America, here on *Pandemic Planet*, we'll look at the global and geopolitical effects of health security threats. Welcome to *Pandemic Planet*.

Katherine:

Welcome to another episode of *Pandemic Planet*, the podcast from the CSIS Commission on Strengthening America's Health Security. I'm Katherine Bliss, a Senior Fellow at CSIS, and I'm joined by my colleague and cohost Steve Morrison, Senior Vice President and Director of the Global Health Policy Center and the work of the Commission. We're joined today by Adrian Thomas, Vice President for Strategy and External Affairs for Johnson and Johnson Global Health. At Johnson and Johnson, Adrian oversees the company's policy work related to global health security and pandemic preparedness, multi-drug resistant tuberculosis, and the development of vaccines to protect against infection with HIV and other global infectious disease challenges. A physician and a clinical pharmacologist, he has deep private sector experience in drug development, product management, and clinical trials. He's here today to talk about the subject we keep coming back to on every episode, the Covid-19 pandemic and its effects on the politics, economics, and social aspects of global health policy, programming, and service delivery. So Adrian, welcome to Pandemic Planet. So it's March 2021. We're a year plus into the Covid-19 pandemic. Right around the time many of us went into lockdown and our worlds turned upside down one year ago, and yet at the same time, another World TB Day is upon us. So I want to get to tuberculosis and to talk about some of the interesting work and partnerships that are taking shape within that area of focus. But first let me say congratulations on the recent emergency use authorization from the FDA to the Johnson and Johnson vaccine, February 27th, and also the subsequent announcement that Merck will be partnering with Johnson and Johnson on production for the US market. I understand doses are already being delivered at sites around the country, there are photographs everywhere and it's very interesting to see. I know this is a recent development and that there's not a lot that you can say at this point, but I wanted to ask you to comment on the international collaboration, technical innovation and partnerships around development and production, that really brought us to this point where within 14 or so months, we have several vaccines that have emerged for emergency use and many more and late stages of investigation for a virus that none of us really knew about not too long ago. And part of the reason that I ask this is that last February, your colleague, Paul Stoffels, the Chief Scientific Officer at Johnson and Johnson, recorded an interview with Steve at the Munich Security Conference, and really outlined a vision for getting to this point in an accelerated timeframe. And I think it was a little surprising that everyone said: Oh, it might take years to have even one good vaccine. And yet here we are with several. So how important were the existing scientific relationships and technical collaborations, and how relevant was the massive infusion of financing that came from Operation Warp Speed and others to really kind of bring all of these different collaborations to the fore in a very short time?

Adrian:

Thanks Katherine. It's a pleasure to be here. Although the topic is as we all know, we're all living through it, is extremely challenging, I'd like to start by reminding myself we only got the sequencing of the virus last January in 2020. So from receiving that sequence to actually developing a vaccine really through

that accelerated development phase and having emergency use authorization granted was phenomenal, but it wasn't an isolated example. You know, we have a number of vaccines now that have received emergency use authorization and there are more coming. I think that critical tool has been the sense that this is a global health emergency and all of the pieces that could be brought together are brought together in a coordinated and accelerated way. So, you know, that piece about collaboration was essential. I don't think that there's any private sector partner who would think about this as being a competitive effort to get to the point of providing vaccines, to help stop the pandemic. You know, in fact, they'll be able to step back and say, well, how many vaccines are needed, we're talking about billions of vaccines to vaccinate the world that's at risk. And no one manufacturer, no one innovator, no one government or health system could do this alone. And so that degree of coordination, the scientific, the regulatory, the rapid infusion of funds to de-risk the investments was critical. And without that, we would probably still be talking about the challenges in developing a vaccine. So where we are today is that we have seen, or can be done in an accelerated timeline when you line those things up. When you have regulatory flexibilities, when you have the clarity around the approval processes, when you have the ability to excite every piece of the vaccine development process. And of course the other part is, you know, going at risk as, as individual manufacturers for starting production before we actually have an approved product, which is also very atypical. So one of the reasons that we're able to have so many vaccines, and I know by the way, the paradox is that the world says: why aren't there more? But the reality is that from the time of approval for each of the vaccine manufacturers under emergency use, vaccines started flowing. And that's quite an incredible result.

Steve:

Adrian, may I just interject here at this point. Congratulations, just to second what Katherine said and looking back on Paul's podcast a year ago, February 14th, I mean, not only was it really prescient and what he said at that time, but how determined and confident he was that they could achieve this and was an emblematic of some kind of deep shift that had happened within the industry and across regulatory and governing agencies that this enthusiasm and confidence was there. I know we're hoping to regather the Munich Security Conference this coming summer. I know J&J is now actually becoming a much even stronger partner there, which is great. And I hope we'll be able to revisit these issues of health security have moved to front stage at the Munich Security Conference, it's no longer this thing where we're clamoring to get attention to these issues there. A couple of things that you said that triggered questions in my mind: what we've seen is a kind of war time mobilization, right, across many countries, because of the gravity of this pandemic. And we've seen that in terms of the scientific model for accelerating the development of vaccines, it's convinced the world that what we thought was unthinkable is now, in fact, achievable. The first question is really is: what is this going to mean for the future and in our expectations and the way we structure the capacities? The second question is: we didn't get it absolutely right in terms of the ability to scale up production manufacturing, and we've seen problems in many different places around the world with many different developers, this isn't one firm or another, it's something that has been a discovery also that we're making lots of headway at correcting for that. And we are getting to scale. And in that regard, I wanted you to comment on what do you think was the discovery about the difficulty of going to scale and how do you see the marketplace evolving? We have, Novavax expected to come on with a quality vaccine production. We know that Pfizer, Moderna, J&J, all are going to be amping up their production as we look forward. What do you foresee in the course of this year? So I've asked you a couple of different questions.

Adrian:

Yeah, thanks, Steve. You know, I guess one of the reasons that we were able to get such an accelerated start was for many of the manufacturers, it wasn't the first time that we've had to do something in an emergency. And I'm thinking back to the Ebola outbreak in 2014 and our experience there was actually not as fast as this experience. So we developed an Ebola vaccine, it was approved actually middle of last year, but in Europe. A lot of those learnings translated into our ability to accelerate, because the production platform was the same. One of the components of the vaccine that we use to create the immune response, the protective response, was the same. So that really saved a lot of time. So that was critical. And I'm sure that's a common piece across many, many manufacturers. I think the second thing is that it wasn't the first time for the global health institutions response. And so the ability to mobilize the financing very quickly from particularly government sources, the US government, funding from Europe, the collaboration from all sorts of academic institutions and health institutions, was phenomenal. So I think a big part of it. Now was it perfect? No, it wasn't perfect, but I'm not sure how much better it could have been, because one of the challenges of having such an accelerated development timeline is that there also isn't the time to get the details of manufacturing right. And it's one thing to develop a vaccine. It's another thing to bring a biologic product at scale like that in a very fast time, particularly when you need to make a decision: do you have a vaccine that's going to work or not? And so creating those external partnerships with large organizations around the world to take a vaccine and actually take the product and put it into vials to be, or syringes, in some cases, in some companies to be injected into people, is a second and different step. And if you think about the challenge of pulling together glass vials for billions of people, mobilizing brand new manufacturing lines for products that have never been seen before. There's a scientific challenge, but that's the manufacturing or the industrial challenge - actually taking it to scale. So if we weren't in the middle of a pandemic, we'd probably be marveling at how fast that was and how remarkable that progress was. I think the reality is we are in a pandemic and it's crippling economies and it's devastating to human lives and families and communities. And so nothing will ever be fast enough, but certainly it was not perfect, Steve.

Steve:

What are you expecting in the global marketplace, looking ahead as J&J, as Pfizer, Moderna scale up, as Novavax comes on stream, as the Chinese and the Russians, Sputnik V, the Chinese vaccines, and what's happening with the Serum Institute of India, and now we have about Bharat Biotech.

Adrian:

Yeah, that's a great question. And, you know, I, I think there are a number of things to think about. First is that we have the immediate pandemic period and the challenge is: how do you vaccinate as many people as possible to slow down transmission and try and reduce the number of infections so that we actually can get a control over the current outbreak? The second thing though that’s a bit more challenging is we've already seen a number of what we variants emerge. So in essence, mutations of the original virus. Some of that mutation is driven by uncontrolled infection and transmission. So one answer to developing mutations is to vaccinate people as fast as possible. But the second is, as we think about the future is: today's vaccines, are they going to be able to cover all of the imaginable variants that may emerge in the future? Possibly not. And so I think, you know, we have on one hand the challenge of check what we have today and scale it. And the other challenge is: do we need to start thinking about how we come with the variants for the future? Will that be through brand new vaccines or will it be through changes in booster doses? And those are scientific questions that remain to be fully evaluated, but I would say it's a little bit like the target's moving. So we have to start with what we have and as effectively and quickly as possible control the current pandemic. And then the second piece is,

okay, what is this likely to evolve to? Will it become like a form of a seasonal flu? We just don't know yet.

Steve:

Yeah. We also see, I mean, we were, we've been in a period of scarcity relative to demand, and there's a tension between the most wealthy and powerful countries trying to satisfy their demand, as against planning for timely, safe, effective, ample vaccines for low- and middle-income countries. But we're looking at a point sometime in the second or third quarter of this year, in which we're going to tilt from scarcity to abundance, it would seem to me, when you look at the projected production formulas, as we overcome the manufacturing barriers, as we get that better. How do you see the world changing when we enter a period of abundance, just the psychology and the politics of that?

Adrian:

It's interesting because I think the sequencing of virus, which was shared a little bit over 12 months ago, so the starting point for most of the innovation was the same point in time. And so it's not so surprising that the finishing point, the point of review and approval of a developed products is going to be within three to six months of each other, of different products. And then each of the products needs to scale. And so I think you're right Steve, there's going to come a point at time at which when we start to scale, it'll all be within the same timeframe, and we will see shortage turn into adequate supply. But the demand side is going to move: it's going to move geographically. I live in the US as you know, Steve, and here, we're expecting to see that the ability to access a vaccine is going to be satisfied around the May-June timeframe. That's not the same for every part of the world. And in fact, if we think about most of the, what we call resource limited settings, or the low-income, low-middle-income countries, where health systems are perhaps not as strong, where refrigeration, let alone freezing, is hard to achieve reliably in rural and remote settings outside of cities, we can expect that it's going to take at least a couple of years, maybe more to fully vaccinate the world. So even though we may satisfy demand in one part or the other part, then the challenge will be: okay, if we move beyond the US, we move beyond Europe and the developed world, we still have a huge number of people that remain at risk and need access to vaccines. Now that's not to say that we should wait until that point. I mean, we have to make sure and be committed to the fact that we can't be successful, first of all, in solving the pandemic, unless we solve it everywhere. But the second thing is that we have to be committed to principles of equity and access, but just the reality of supply chains, of timelines, of the complexity of health systems, means I don't think we'll see that saturation point, you know, this year, at least Steve. And then as I've said, as the virus moves and changes genetically, then we will have a different problem to solve or a shifting problem to solve.

Steve:

Thank you. Katherine, you've been giving a lot of thought to what this may mean for tuberculosis. And of course, Adrian's one of the world's great experts in tuberculosis. Katherine, what do you think?

Katherine:

Well, sure, I mean, COVID-19 is obviously a crisis of the moment and we don't know what its future will look like, but TB has been a global crisis for quite some time. And even before COVID, tuberculosis killed an estimated 1.4 or so million people per year and infected 10 million people, at least in 2019, 400,000 of those cases, each year resistant to two or more drugs. Now under COVID with the diversion of health resources, finances, personnel, and even diagnostic equipment like GeneXpert to COVID response,

there's been a great deal of concern that progress on global TB could really suffer. And the economic disruptions and food insecurity, you know, linked to undernutrition and other issues don't help either. And so some people are predicting that over the next five years, we may see an additional six or more million cases than we would have seen otherwise, more than 1 million additional cases per year, just because of the setbacks that we've experienced under COVID globally. So, you know, I would ask you to think about what has really been lost in the efforts against TB during this COVID period, beyond kind of the closure of clinics and you know, or what have been the, the implications for patients who otherwise might've had to go into clinics for injections or for diagnostics? How have things been impacted, and what are some of the innovations or work arounds to try to make the best of a new situation around tuberculosis?

Adrian:

Katherine, I think there's no doubt that the pandemic has caused, in many countries, a reprioritization of global health and health priorities. And in almost every country there are fixed resources in healthcare, particularly in the parts of the world where tuberculosis and drug resistant tuberculosis are high burden. The number of healthcare workers per 10,000 is far, far less than we see in the US, and in Europe, or where I was born in Australia. So there's no doubt there's been an impact. And the Bill and Melinda Gates Foundation published a partner's report, which suggested that nearly a decade of progress has been lost. I'd say on the one hand, it's an unavoidable impact, because we had to solve this pandemic. On the other hand, I think there are some major lessons that show us that having strong health systems, resilient, frontline health workers, that capacity, diagnostic capacity. We talk about PPE: well, those masks were diverted to be brought into the service against the pandemic. So we've learned a lot about that. I'm privileged to actually represent the private sector constituency on the Stop TB Partnership board. And I work across sectoral board members, governments, institutions, donors, affected communities, academic groups. And we have an incredibly strong, committed constituencies that are working in the fight against TB, but how could we accelerate and get more traction against TB during the current pandemic, without being tone deaf? You can't be tone deaf to the impact of the pandemic at a time like this. It's, it's got to be done in a way that's consistent. And what I'd say is there are some common principles, particularly for respiratory-spread diseases, like COVID, like tuberculosis, for example, where protective equipment like masking, isolation, rapid detection of new cases, and contact tracing, appropriate diagnosis and treatment, are essential.

Adrian:

Those principles are the same. And in many countries, the frontline TB workforce, the healthcare workers that do that works were flexed and moved to focus on the pandemic. So we need to acknowledge that and we need to think, how do we strengthen that workforce? How do we think about not diverting diagnostics, but building excess and extra diagnostic capacity? This won't be the last and it certainly wasn't the first pandemic. So in between these urgent crises, is there a way of thinking about those sorts of workforces and those diagnostic capabilities as providing an emergency reserve, while they continue to solve the problems that we see in TB. On the innovation side, last year, for example, we launched what we call a quickfire challenge, where we globally ran a prize looking for innovative ideas to come from people in the field, on the ground, who actually have to deal with these issues in high burden countries. And, you know, we were flooded with ideas and we were able to fund five of those. I know that the major aid agencies and development agencies and partnerships are doing similar work. And so it's not all bad news, but it's a stark reminder that as a world, we can't continue to wait for crises and then react to them and then go back to business as usual. We have to be far quicker at predicting and responding to crises and making sure that we have stronger health systems in between.

Steve:

Well, that gets to the point really of, we have been stuck for a very long time in the cycle of going from crisis, to complacency, and neglect over and over again. And whether this is such a profound and scaled, 100-year pandemic that shakes us so badly and so profoundly that perhaps we've crossed a threshold and we will make those sort of systemic long-term investments that we haven't had. And I would hope that what it means is that we have a larger coalition of interests that are committed to a sustained approach. In other words, it's not just public health people, biomedical experts, folks who are focused on healthcare, but it's all of the sectors of society who have been so dislocated and damaged by this, that would, I hope, stand in favor of a much bigger and more sustained approach to building these capacities and that maybe we can finally break that cycle in some fashion. It is a different world that we're entering right now. I fear that we could go in any number of directions, that if we've had setbacks in malaria and tuberculosis and HIV, those are areas where we've had historic gains through incredible efforts, through partnerships and mobilizations over the last 20 years, each of those communities are related to one another. And each of them is thinking in very similar terms about how bad is the, how deep and lasting is the damage to us. And they're also thinking more, hopefully that we're entering another world. And we are going to enter another world where the fear of another coronavirus outbreak is going to hang with us, as we're trying to reset and recover the gains in tuberculosis and other health areas. How are you thinking about what that world is going to look like in the future?

Adrian:

So I think the only thing that we can be certain about is that we should expect to see more infectious challenges and more disease challenges to our health systems. When you think about climate change, for example, one of the areas that our team is working on is dengue fever. And dengue fever is another viral infection that's actually spread by mosquitoes. The infections, the patterns, and the countries that people are being infected in is changing very quickly because of climate change. We're seeing migration of the mosquito and migration of the virus. So you think about this current pandemic and the pressures that cause potentially viruses to jump across species from the zoonotic viruses to move into humans. Again, we think about issues like climate change. We think about overpopulation. We think about those issues about poor ventilation and so forth. They're not going away, they're becoming exacerbated. So I think we need to, we need to accelerate our thinking and start being more proactive. And I think, you know, there is a recognition and there is a willingness know, not just from the private sector but also across stakeholders in society to consider these issues that ultimately it's about health security. It's about economic security. It's about human health and impact. Many of these are predictable. And so, we shouldn't wait for the next respiratory virus. We had swine flu, the avian flu. We've now got COVID. We have seasonal influenza and we have tuberculosis and other things. Where we can make advances we should. And, you know, I go back again to tuberculosis because it's a solvable issue. One of the reasons that we're so concerned about the current pandemic is people have been locked down and they've been in their households and household transmission of reactivated tuberculosis is a big issue. So on the one hand, as we've seen that rise, potentially, on the other hand, influenza, the reports have gone down because everyone's wearing masks and it's not being spread, you know, between people outside the houses. So I feel like where we have these identifiable and preventable diseases, we should move on those. We should aggressively take them out of the equation so we can focus on these less predictable, more catastrophic events, short-term events.

Steve:

Katherine, what do you see? What's your thinking here looking ahead?

Katherine:

Well, you know, I was just going to say, you know, we've heard the word accelerate several times now, and it really makes me think of the ACT Accelerator and this discussion about diagnostics, therapeutics and vaccines, with the health systems connector work underneath. And it really seems resonant far beyond just the COVID context. And I was just wondering how you see a model like that being relevant or useful for thinking well beyond COVID to trying to encompass some of these forward-looking challenges, whether around dengue or diseases that we don't know about. Is that kind of comprehensive model where we should be thinking about for a broader matrix of challenges?

Adrian:

Well I think first of all, the spirit of collaboration and partnership is something we should not lose. I mean, quite often there's a sense of, of the public health institutions do this, and this private sector should start at a distance and do their thing. And, you know, in between the gaps are sort of filled and funded by aid agencies and donors in the world of global health. And that's fundamentally unhealthy. I mean, at the end of the day, we're sitting at a period in time where the explosion in science and medicine and technology has never been so productive. And the reality is, is that only a certain amount of that trickles down to address the issues that we're talking about today, the global health issues. And I think at least part of that could be solved by having a much more transparent and active partnership in this space and not letting that spirit disappear when the crisis disappears.

Adrian:

I think the second thing is the question that worries a lot of people, which is institutions for the sake of institutions become hard to justify. And so the extraordinary efforts required to pull together, for example, the COVAX facility, it took so much to begin together. Let's make sure we utilize it as fully as we can, but let's make sure it doesn't become an answer for everything that we can't even predict today. Let's make sure that we actually cross the finish line with the challenges we have today, solve for those, and take relevant learnings forward. I think at the diagnostic space, that's something that, that, you know, even here living in the US it wasn't that easy to get a fast diagnostic. That seems rather incredible, doesn't it? When we know that there are diagnostics that you want to have to show that you have evidence of a current infection things will pick up antigens, we have diagnostics you want to apply to see if you've had previous exposure, antibody tests, and so forth. They were in different places, you know, you couldn't access them at the same clinic. For good reasons, people didn't want potentially infected people going into a normal clinic, right. But even so, in a very resource rich country, that was not easy to access. And that's strange. And so I do think, in addition to the vaccines and the therapeutic modalities, we have to think how to scale rapidly and make access to simple diagnostics at times like this. And that's a piece I think that could be improved a lot.

Steve:

Yeah, I agree. I mean, there's quite a bit of discussion right now about whether the focus on testing is fading in this current situation. Fortunately for the United States, in the $1.9 trillion bill, there's considerable resources on testing there, and I think it'll have major impact. What you've told us today is a pretty optimistic vision. I mean, I think it's J&J is imbued with optimism right now, and you're not alone in looking at the world in that way, and it's carrying us forward out of this crisis. So I'm going to flip things around. Normally we ask people what gives you great optimism and strength? I think you've already answered that question for us. So we're turning on its head a little bit and ask us, well, what worries you the most? What are you most concerned about in the future, in the next year or two?

Adrian:

You know, what I'm most worried about is some things that are more acute, which are, let's say, maybe unintended consequences of protectionist policies. That bothers me a little bit. One of the things, one of the challenges for a global manufacturer like Johnson and Johnson is how do we make sure that we can move vaccines freely around the world and address demand wherever it exists? And so we have to be understanding, of course, the priorities governments have for the citizens and their interests. We have to think hard and make sure that we don't inadvertently create a situation where we have a pandemic that continues to become almost endemic because we never get to scale. We never get vaccines where they're needed everywhere they're needed and something that we're all living through wherever you are in the world.

Steve:

We just saw reports about AstraZeneca vaccine blocked from export to Australia, to your home country, coming out of Italy and the EU provision. There's reports in the Wall Street Journal about issues around American export as well. So it is a big issue. When you say you're concerned about that, is your hope that as the scale-up proceeds, and as we need to shift our focus geographically, that governments will respond by disentangling the export and trade barriers that are in place?

Adrian:

Yes, exactly. Exactly. And thinking about, you know, we're all in this at the end of the day, and the reason that we're concerned about variants is those variants that travel. What we saw in South Africa is over a period of really only a few months, you know, the current dominant variant took over. It was very low prevalence and all of a sudden it was there and it took over the population. Now we know it's in the US, it's undoubtably in many parts of the world, same with other variants in the UK or Brazil or wherever. So I think, you know, the virus travels and we have to think about that. And, and therefore you can't afford to be isolationist, that's one thing. You know, the other thing that troubles me is we tend to forget so fast. It would be a terrible shame, if five years from now, the level of these rapid response systems and all these incredible investments that we've made, we let them fall apart and we can become complacent. I'm not saying that the whole world needs to revolve around the threat of a pandemic, but you know, the world needs to be able to respond I think in a predictable, I use the word again, Katherine, an accelerated way. So that worries me a bit that we'll move on to, Oh, well, it's not here anymore. Not a problem for me and life moves on. That's the other part that does concern me.

Katherine:

Well, Adrian Thomas, Vice President for Strategy and External Affairs for Johnson and Johnson Global Health, thank you very much for joining us today and good luck to you and your colleagues in the year ahead.

Adrian:

Thanks very much. I really appreciate the opportunity today. Stay safe!

Steve:

Thanks, Adrian, it was a great conversation.

Outro:

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