**TRANSCRIPT – EPISODE 2: Vaccine Equity: How will the poorest get the vaccine?**

SPEAKER:  
Welcome to Thinking on Development, a podcast by the Institute for Global Development at UNSW. Each episode we are joined by new guests to explore some of development's biggest questions.  
  
DAVID SANDERSON:  
Hello. My name is David Sanderson, and welcome to this podcast from the Institute for Global Development here at UNSW in Sydney, Australia. Today's podcast asks Vaccine Equity. How will poor and more vulnerable people get the vaccine? COVID hardly needs an introduction. We're all living with it, but with wildly varying outcomes when it comes to treatment based on where we live. In some richer countries, the discussion is about offering the vaccines to those as young as 12. Who are at a bit tinier risk of getting sick. Yet in many poor countries, the figures are frightening.  
  
The World Health Organization, the WHO, states that in rich countries, one in four people have received the vaccine. It's one in 500 in poor countries. Six countries in Africa have yet to receive any doses at all. And within these countries, there are great disparities. In all countries, I should say. In the USA, a recent Census for Disease Control study found that COVID has affected racial and ethnic minority groups, the worst. In India, if you can't afford to buy your own oxygen, then you're at serious risk of dying.  
  
And here in Australia, just this week, the vaccine rollout to people with disabilities has been called an abject failure, with only around 1,000 out of 26,000 vaccinated. In April, the head of the WHO called vaccine equity, the challenge of our time. And that's what our podcast is about, how then do we rise to this challenge? How does the world ensure that it's not only the richest to get the best help in their health first, and we don't leave the poorest and most vulnerable behind? To discuss this, I'm joined by three experts from the USA and here in Australia, each with experience and understanding in this very complex area that we're going to be looking at.  
  
Dr Anshu Sharma is co-founder and chief mentor of SEEDS India, one of the country's most important NGOs that combines thought, leadership and practical action in disaster recovery. Anshu is joining us from Delhi. Professor Raina MacIntyre has the bio security program at the Kirby Institute, which, among other things, conducts research in epidemiology, vaccinology and infectious diseases. Raina is well known in Australia as an expert commentator on infectious disease, and is joining us from Sydney.  
  
Dr Ronak Patel is a medical doctor based in the USA. On the West Coast, he is an emergency room physician dealing with COVID. On the East Coast he is director of the Urban Resilience Program at the Harvard Humanitarian Initiative. Ronak is currently a member of the WHO Health Cluster Task Force for COVID. Ronak is joining us from California. So thank you all three for joining us today from great distances. Anshu, I'd like to start with you, if I may. India is currently experiencing a dreadful increase in COVID, paint a picture of what's happening out of the work your NGO SEEDS is doing in response to this.  
  
ANSHU SHARMA:  
Thanks, David. So I think, as you just mentioned, things here are grim. We are still reporting about 4,000 deaths a day. And you did mention in our intro that in these parts, if you can't buy your own oxygen, then you are in deep trouble. Well, the fact has been for the past many days that even if you could buy your oxygen, there was no oxygen available. We seem to be emerging out of the big darkness that prevailed ten days ago or so when we couldn't really find any beds, oxygen or medicines, and people were really desperate. The numbers are dropping. Nationally, the numbers are dropping. And big cities like Delhi and Mumbai are seeing fewer cases every day than the number of recoveries. Those queues outside the emergency wards of hospitals are more or less gone.  
  
But even as we start seeing some light at the end of this part of the tunnel, the problems are still aplenty. There are two areas that we are really concerned about. One is that this second wave is now moving into very urban areas, into small towns in rural areas where you don't really see the cases on Twitter and our WhatsApp groups, often even in the news. And the second problem that we are facing is the conversations and scientific advice we are getting about a possible third wave that may actually hit even younger population, children the hardest. Now, the areas and the communities that we are looking at in the current phase, they are remote, the tracing is low, treating is difficult and low, and basic infrastructure is low, which is very difficult to ramp up in a short time span as time span as a surge.  
  
So, in the surge, equipment is being brought in. I think there's globally a shortage of oxygen concentrators, ventilators and other related medical equipment, because all agencies in India, the government and civil society organizations, hospitals, have been ordering from wherever they can get the stuff. But the problem is, you may be able to order and procure ventilators in bulk, but you can't create the human resource overnight that is required to run this equipment. You can set up beds in the hundreds or even thousands, but you can't get the nurses and the ward staff to take care of people in these, you know, facilities. So, that's where we are. On the surface, it's looking like it's getting better, but we're not sure whether it really is. There's still a lot of unknowns out there.  
  
And on the front of SEEDS, what we've been doing is broadly three levels of work. One is we did something that we don't normally do. We set up a helpline where for the past 20 days, about 25 men and women have been working. And we are providing 24/7 support to those who don't have access to Twitter and WhatsApp, which have been great sources of support in this time when all systems were collapsing around us. So these under the radar communities need some kind of lifeline to help them find these resources or even advise, you know, medical advice, which is hard to get otherwise. So we're doing that.  
  
The second thing we are doing is we are setting up these decentralized COVID care facilities. These are about ten, 20 bedded facilities which are attached to government health facilities that are getting overwhelmed. So individuals who can't immediately find beds can be managed here. And those who are getting a little better in hospitals can be stepped down to these facilities so that critical care can be provided to those who need it most. We are also providing equipment to facilities run by government agencies and NGOs. And lastly, we are just trying to sit back, now that things are getting a little better, we're trying to sit back and visualize and anticipate what's going to happen in coming months and how we can mobilize a little better and be in a better position than we were when the second phase hit us. David.  
  
DAVID SANDERSON:  
Yeah. The news here when you're on social media, it's the cities as Delhi, as Mumbai, richer cities, but of course, with pockets of poverty, how is COVID ruling out when it comes to poorer people, especially in rural areas that may not even have access to electricity, let alone any other, you know, vital services?  
  
ANSHU SHARMA:  
So that's the scariest part for us right now, David. Probably what was happening was initially when the big cities were getting all the media and, you know, attention from the response agencies, the trouble was already brewing in the countryside. But now that we've started looking more carefully at these places, the evidence is very alarming and very disturbing. And a lot of it is still anecdotal. So we are, you know, where tracing has been made possible, we are getting reports of entire villages, everyone who's tested in a village, in the track and in the hills, in some places, is testing positive. You know, 100% positivity rate in small pockets.  
  
And we are hearing of places where this kind of testing is not possible. So there are literally every family in a cluster or in a hamlet would be reporting people with symptoms. We are reporting young people dying, and we really don't know what's happening there. So, it's a lot of little pieces that we are trying to put together to create a larger picture. And there is data, but we all understand that right now getting very accurate data is not possible. So, it's a bit of shooting in the dark, but we are trying to find strategies. Because you can't inject, you know, equipment and medicines and, you know, services in these places. It's so widespread now. But we are trying to figure out what can be strategic ways to, you know, make things a little better and manageable. David.  
  
DAVID SANDERSON:  
Thank you, Anshu. We'll come back to that with Ronak in a moment. But I just want to turn to Raina first. Raina, turning now to Australia. Australia is, of course, a very wealthy country with extraordinary infrastructure, some of the best in the world. And has been extremely successful, of course, in preventing spread of COVID, along with New Zealand, one of the most successful in the world, in fact. And yet, at the same time, rollout has been slow. This week's Royal Commission into the vaccine rollout among people with disabilities is especially damning, with about ten people vaccinated a day in the last month, something like that. What's gone wrong, do you think?  
  
RAINA MACINTYRE:  
Look, it's really hard to say. But operationally, vaccinating the disability sector is similar to vaccinating the aged care sector. They've met, the aged care rollout was also slow, but they've managed to almost cover just the residents though, they haven't vaccinated staff in aged care yet to the levels that are required. So you have to ask the question, why is it that people in the disability sector haven't been vaccinated whilst we're now opening up vaccination for 40 to 49-year-olds?  
  
Is there an implicit value being placed on different lives? That's the question I ask, because operationally it should be straightforward. It should be similar to doing the aged care rollout. So I think it's a real concern. And, you know, the people who are most vulnerable, as we've seen throughout the pandemic in different settings, are the most at risk for complications and for death from COVID. So, we should be really protecting the most vulnerable first.  
  
DAVID SANDERSON:  
Yeah, absolutely. And it does seem extremely strange. And that's a big understatement. Because, of course, the idea of vaccinating the oldest and going down in age, is about vulnerability, especially with those who are over 50 being especially vulnerable. And yet disability is not on the radar. And is there a suggestion perhaps or a consciousness or subconsciousness that actually people don't really matter that much?  
  
RAINA MACINTYRE:  
That's a question I can't answer, but the perception is, yes. You know, I don't know what the reason is, but that's the perception it presents that there is different value placed on different lives and different urgency.  
  
DAVID SANDERSON:  
OK, well, then let me jump to Ronak and maybe we could build this out a bit, especially thinking of the CDC report that came out in the states around those who are more marginalized and ethnic minorities being pushed to the side. And the same stories from the UK as well, in fact, with their research there. So, Ronak, you're dealing with COVID response day to day as a doctor, as we've said, but you're also on the WHO task force relating to COVID rollout. What's your assessment? Well, one of what you've heard just now and of your own experiences, and how do we genuinely enact the WHO head's words about game changer stuff?  
  
RONAK PATEL:  
So, David, that's an excellent question. It's a question of the moment. And, you know, Anshu and Raina have touched on a couple of other factors already. You know, I'll say that there are three primary macro level factors, and then a slew of micro level factors that we need to address. You may have heard some of these macro level factors, one of which is intellectual property, because there are specific private pharmaceutical companies, Pfizer, Moderna, who have developed these vaccines and were incentivized to develop those vaccines by generating profit on those. And being able to develop enough volume of that vaccine requires them to share that intellectual property.  
  
Now, Moderna has said they're not going to enforce their intellectual property on some of this right now. And the US has talked about an intellectual property waiver. But many other countries that have very strong pharmaceutical industries are not doing that, notably Japan, the EU, UK, Australia, Canada, because it's not in those companies interests. Others said there are two other factors. Even if you did waive that intellectual property, which is manufacturing capacity. Like Anshu said, even if you have some of this available in supply, having the infrastructure to be able to deliver it and implement that is a whole other thing. And so there has to be that capacity to manufacture it.  
  
And then the third is just to manufacture, it requires a level of technology that many companies don't have. So, people talk about the reverse engineering of antiretrovirals that Indian pharmaceutical companies did. That was a big game changer for supplying HIV medication to poorer countries. But it's not so easy to do that with an mRNA vaccine. And that's what we're talking about here. So, it needs to be all three of those things, intellectual property and the complex combination of intellectual properties that go into this, manufacturing capacity and that technology transfer.  
  
Now, there are strong opinions on all sides of this, but those three factors do need to be in place for us to be able to get that supply to be available. And then on the flip side, you know, the micro level factors are also very important. What we've been discussing in that WHO Health Cluster COVID Task Force, is all of those things that you need to engage with these populations, right? So, you need to really engage with these marginalized populations and disadvantaged populations through trusted lines of communication, two-way communication.  
  
So you can understand their needs, their opinions, their concerns, dispel any misinformation, reach them with a health care worker task force that is appropriate and scaled up to those needs, mobile delivery. We have a lot of experience with this in global health. This vaccine delivery is not new. Global public health is not new. We just need to be able to implement that and scale that up in a rapid fashion, which, again, takes a lot of political will and money.  
  
DAVID SANDERSON:  
And what you touched on there is about the big shapes, the profit incentive, but then also touched on poverty. And those two things obviously don't go well together. And so the COVAX rollout, which is richer countries organizing to give vaccines to poorer countries, is there and has had some degrees of success. And yet, you know, the rollout as stated earlier, as I mentioned, is slow in a number of African countries. Six still don't have any at all. And the WHO head has called for partnerships, Lesli, older model, if you like, of development largesse from rich countries. What's your take on that?  
  
RONAK PATEL:  
Well, part of that is true. You need that. So COVAX is a noble idea, but it's only been funded to about $2 billion. And GAVI, the Global Alliance for Vaccines, has said that what's needed for this year is five billion. Which sounds like a lot, but it's paltry to the sums of money that the US and rich countries have spent on their own domestic stimulus packages. So, that could be done at the blink of an eye, right? So, yes, it needs to be done as part of this largesse of funding this, because at the moment, that's the only way we're going to be able to get that capacity and that volume of vaccination rollout.  
  
But we should lay the groundwork for future pandemics. And I know we're going to discuss that in a bit, so I don't want to get deeper into it. But this won't be the last pandemic. And so we shouldn't be surprised that we're going to need all of these things in place for the next one. And that's going to require these types of partnerships and cooperation that we've been talking about in public health for a long time.  
  
DAVID SANDERSON:  
I'd like to open this signed up tomorrow to have a conversation between us. And this is the same old story. There ain't nothing new here. As we know, disasters happen. The poorest people get affected the worst, those most vulnerable, those who are older, in firm, disabled, you name it. And this happens again and again. It isn't going to change. We're all living with COVID now. This is a global phenomenon. It's pretty unusual to have a global phenomenon. Maybe climate change is a comparable, but a lot of people haven't caught up to that one yet. Can it be different?  
  
I'm jumping back to the WHO head's words about game changing stuff and rethinking being serious about this. You mentioned Ronak of course, they will be more of these. Do you think we're just going to do the same where the rich countries drawbridge and be sort of nice about sending little paltry sums, as you say Raina, it's paltry compared to the scheme of things, and really, you know, forget it. And we do those things. That is a scenario. Anshu, maybe I could sort of provoke you to respond to that.  
  
ANSHU SHARMA:  
Well, it's not merely a question between countries that's like a larger picture on a global canvas that we are seeing, but the same logic starts applying within countries and within cities and within smaller communities, too. There is a divide. And I guess just like in any other disaster, these are times when you see the best and the worst of humanity. So there will be some who will be altruistic and there will be some who will not only bolt the doors and lift the drawbridge, but will also shoot arrows. So, in this situation and the kind of complexities that we are seeing around us, I think just being altruistic will not solve the problem.  
  
Unlike what we see in the aftermath of, say, a major earthquake or a cyclone, which is partly easier because it's localized and also partly easier because, you know, the impact is known and the chain of events is pretty much linear. Here, it's just moving in all directions and in very, very unknown and fuzzy territory. So, I would say the situation is far more complex to answer with the knowledge, experience and evidence as we have from the past. And I would say that it really requires very smart altruism, you know, to address what we are seeing at this point. David.  
  
DAVID SANDERSON:  
Raina, what's your take on this? Do you see the host for smart altruism, or do we think this divide will continue? You painted the response earlier about actually, do we really care enough to actually think about less able people?  
  
RAINA MACINTYRE:  
The divide is one interesting issue, but the other interesting issue is what actually panned out last year. And you know, in 2019, the Global Health Security Index was launched with great fanfare, which ranked the United States number one in preparedness. And of course, what we saw last year was small Pacific islands like Samoa and Asian countries like Vietnam and Taiwan managing to control it well. But countries like the US and many European countries, the UK, not so. And I think the Global Health Security Index was sort of going off on a slight tangent. It was a good, used good metrics, but the metrics that it missed out on were leadership and culture. Right? Because public health measures are draconian by nature, for controlling pandemics and epidemics.  
  
So if you're trying to implement public health measures in a country that's highly individualistic culturally, that's difficult in itself, but that can be overcome by good leadership. But if you've got the combination of a culture that's not accepting of public health measures plus bad leadership, that's disastrous. And that's exactly what we saw happen in both the UK, the US, Brazil. We saw authoritarian regimes embracing anti-science agendas. So that in, you know, Trump, (UNKNOWN), Duterte in the Philippines. And there was, and that kind of flipped everything upside down. You know, the global health movement has always kind of looked at rich countries helping poor countries, but everything kind of turned upside down on its head last year.  
  
And we've seen the US really claw back and regain, done an amazing job on the vaccination program, really. And now, actually, the US has pledged to vaccinate the world and to send, you know, I think 80 million doses of US made vaccines to the rest of the world. And that's an important step, because there's also been, you know, moves for trips about waivers and, you know, the patents and so on, patent laws so that the vaccines can be manufactured everywhere. These are issues we saw with HIV, you know, two decades ago. But, so I think there's more than one solution. And I thought that was a good move on the part of the US really, to pledge to supply US made vaccines rather than, you know, sending less effective vaccines that nobody wants in rich countries to poor countries.  
  
RONAK PATEL:  
You know, Dave, I think that's a nice point that Raina is making about that gesture by the US. You know, I'd like to be optimistic. My concern is that it's a gesture and, you know, the story has not fully been written yet. I want to see how much follow through there is on some of these commitments and statements by some leaders. It is something that didn't have to happen. So it is nice that the US is moving in that direction. But my concern is that there have been lessons learned already, even from last year, about how wealthier societies and wealthier nations may be able to enact policies, some draconian, as you said, Raina, that are self-preserving in some ways and put that burden of this pandemic on the poor and disadvantaged.  
  
And so many countries enacted lockdowns and restrictions that if you were wealthy, you could compensate for in many ways. But if you were not, you required a lot more stimulus or assistance. And oftentimes, they were insufficient, very delayed and still wholly inadequate in the length of time that they would need to be implemented, even in the US, even with the trillions of dollars that were committed. So much of that went to different places rather than the specifically vulnerable people that it needed to go to. On a global scale, I think societies and nations and people have learned that, you know, it's almost disgusting to say, but financially, I've profited during the pandemic. You know, interest rates are low, labour is cheap, the stock market is all time highs.  
  
So people like me, people that have resources, people that have the ability to enact some of these political changes, have almost been sheltered, not completely, but greatly from the impacts of this pandemic. And for us to say that this is a game changer because it's global, it is global, but the impacts, the way that it has panned out, just specifically this virus in this pandemic, not to say that others won't, should have impacted people more and these wealthy decision makers in a way that would have induced more change. And maybe the next one will, but right now it has not yet. And so I think that's going to be something that will actually move the needle.  
  
DAVID SANDERSON:  
You make a really valid point, Raina. And Ronak, of course. If you can afford to be on lockdown in your apartment or in your house, it ain't great. But it's nothing like when you can't. Anshu, the stories that emerged in one of the lockdowns was removed in India of people who were migrants having to flee. And, of course, inadvertently spreading the virus as well. Again, to come back to the poorer people suffer the worst in these things, is there anything that can be done different? Is there any way there could be popover, if you like to use that old phrase?  
  
ANSHU SHARMA:  
Yeah, it's, you know, while even I used to take pride in having spent a lot of years and seen a lot of disasters in so many places, David, this one has really kept all of us on our toes. And it just doesn't stop surprising us, you know, with the kind of twists and turns we are seeing. I think so, you know, there was a part of this conversation that touched upon vaccines and equity in that. And Ronak and Raina spoke about the production and the supply side of that word again. You know, when this was panning out last year, the picture ahead of us seemed pretty good and in control when it came to vaccines in India. You know, we are the world's largest producers of vaccines.  
  
There were commitments made to smaller neighbours and they were being honoured when suddenly this turn of events has, you know, made us think a lot more than we were thinking last year about this. And the moment you start doing that, then a lot of things start, you know, just emerging from nowhere. So initially you would think of supply, you would think of production, scale, poverty, how to make it accessible to people. But then if you break down the delivery side, it's not a simple question of access or no access or low access. The binary nature of this, you know, equation that we were seeing earlier itself is flawed and it's oversimplified.  
  
Now, when you look at those who are right now outside the circle, that can be broadly split into two groups. Those who don't want it, and those who can't get it. So we are working a lot on what we call vaccine hesitancy. But, you know, that phrase itself, although it's required, you need to call it something, but it just paints a picture of an individual who's ignorant and does not want the vaccine. Behind that, you know, when you start talking to groups and you start engaging with them, you realize that there's so much that is going on behind it.  
  
It's not a question of being illiterate or, you know, ignorant or having lack of awareness. There is hard intellect at work, if I can call it that. There are echo chambers even within the poor. They have access to information, but they are overinformed. They are misinformed. There is social media that is dishing out all kinds of conspiracy theories and fake news. And it's impossible for even people like us to differentiate between what's fact and what's fiction. So you can imagine what's happening at scale in these communities. The media is often just, you know, pitched in to fan more fears, you know, conversations around adverse reactions, around people who were jabbed but are still dying horrible deaths.  
  
Now, there is data which says that it's only a fraction of a percent of people who see this, you know, who undergo this kind of an impact. But here are people who you know. You know, there are people in our friend and family circle that people who are talking of individuals who are known to them, who experienced such a reaction or experienced such a sort of anticipated eventuality after getting the vaccines for those who did get them. So, now suddenly there is a lack of trust in the data that we are seeing. Whether it's data to do with new numbers, with deaths, with the efficacy of the vaccines themselves. And so, you know, vaccine hesitancy just always amplifies this whole complex canvas on which we are working.  
  
And to address this are, you know, conventional way of awareness campaigns and the IEC material is not going to solve this problem. There have to be ten different buttons that need to be pressed at the same time. We need, we literally need psychologists informing our campaign managers on how to run this and make this happen. And then, of course, there's different jabs, there's different pricing, there is remoteness, physical remoteness of places and access issues. So, there's a lot that happens, you know, behind this one problem that we see of the poor and poverty and access. David.  
  
DAVID SANDERSON:  
Anshu, I'll ask some questions to you Raina as a result to that. Today's news here is that in a recent survey, about one third of Australians may not take the vaccine. And as well as hesitancy, another word used is complacency. And is this a perverse outcome of the success of Australia that we're not feeling it? I can go to the shops, I could do anything, I could go to the movies, I have no face mask on, are we too complacent, Raina? And as a result, do you think we'll be beaten down the road when borders open and the rates will go up?  
  
RAINA MACINTYRE:  
Hardly, but I don't think it's the whole answer. You know, when you have new vaccines, there's always the chance that there could be rare serious adverse events that were not picked up in the clinical trials because the trials weren't big enough to pick up rare effects. And that's exactly what's happened with the AstraZeneca and Johnson&Johnson vaccines. There was a rare and serious side effect that has quite a high rate of fatality. And you can't just plaster over that and tell people it's fine and cover up. You have to actually communicate the risk in a reasonable way and address the concerns of people. So I think we had a, there were also a clear efficacy differences from the clinical trials between the adenovirus vector vaccines except the Sputnik one, which has been, there's been questions raised about the data in that one.  
  
And clearly the mRNA vaccines have a higher efficacy when you look at the clinical trials, which is what every regulatory body looks at. And yet we spent a lot of time trying to spin this message, they're all equally good. And, you know, you won't die if you have the vaccine. So, then when the adverse event came along and the age cut-off came in, so people under 50 would get the mRNA vaccine and people over 50 would get the adenovirus vector vaccine. Then that raised questions, you know, and it was partly, I think, because of the way that the information had been presented prior. And also with, you know, certain leaders being vaccinated with the mRNA vaccine.  
  
People aren't stupid, you know? They read. They can see what's going on around the world. You can try to control the narrative as much as you want in your own country, but you can't control information. So people have access to information. They know that there's a serious side effect of this vaccine. And I think the mistake there was not addressing that head on and initially not diversifying the vaccine portfolio enough. So we were left with very few options when first the UQ vaccine fell out and then a serious side effect popped up with the AstraZeneca vaccine.  
  
There were no options, you know, and that's really, you have to address community concern. You can't just, you know, tell them it's like a lightning strike, which, by the way, it isn't. You know, a lightning strike has a risk of one in 50,000. And this is somewhere between one in 50,000 to one in 200,000, depending on the age group. So, yeah, I think that's actually a major factor. And I think the solution there is actually to address people's concerns in the community in an intelligent way and not treat them like they're stupid.  
  
DAVID SANDERSON:  
Of course. And Ronak, can I jump to you, please. Especially about that idea of communicating, talking earlier about the CDC report about more marginalized people on the edges. Is there something that could be done better around communicating and linking the realities of those stories with people who are on the edges?  
  
RONAK PATEL:  
Yeah. I think, you know, Raina and Anshu again, laid out very clearly, there's such complexity to just understanding the basics of developing the vaccines, the variations in them, and, you know, the risks carried by taking it and even the protection that it offers, let alone the misinformation and social media echo chambers that Anshu mentions within some of these communities. So it really requires this two way level of communication and deep engagement with these communities, and even engaging them in that process of getting leaders from those communities active in these communication channels, right?  
  
So then recruitment of those populations into the task forces and into the health care workforces that will go out and spread the information as well as vaccinate. But it can't be some of this top down blueprint approach. You know, this blanket messaging that Raina was talking about, it has to be done at that local level. And again, we have experience with this. Again, this is not novel. This is not rocket science. Anshu does this on the regular, you know, every day with various communities, and working with even smaller community based organizations than his own.  
  
And so the humanitarian community, development community, the public health community, has these organizations connections. We just need to start putting more effort into those. But that communication aspect is what's going to get that final piece of the equation done, whether you have the supply in the right places at the right time fast enough, getting those shots in the arm is going to require that level of communication and trust with these communities.  
  
DAVID SANDERSON:  
Yeah. And my final question to each of you is thinking about the WHO heads message about, you know, doing the right thing and actually getting it together, we know what needs to be done. I'd like to imagine in five years time, and because we're in the midst of this now, five years time and it's over, in inverted commas, to what degrees of that you want to, what's the headline of the good news story that starts off with, we met the demand that the suggestion of the WHO had. What were the two or three key things that actually happened to have a better outcome? Anshu.  
  
ANSHU SHARMA:  
I would say we learned how to understand complexity of issues. And because we handled this worst scenario situation that come probably once in a century, we learned to do it so well that we could handle other problems that we were grappling with for the past few decades. I know this is a podcast and listeners can't see me, but for those of you on this call, let me just quickly turn my camera around and show you what this morning looks like in Delhi. You'll probably get a slightly fuzzy view because it's a very pleasant day. We are in the middle of the summers, peak summers. We were anticipating heat waves, but it's a really pleasant day out here in Delhi. It's cloudy. There's a cool breeze. It's drizzling, but it's actually not a good day.  
  
These are remnants of Cyclone Tauktae, which over the past week has just ravaged the West Coast and all the states on that coast in India. It's killed scores of people. It's destroyed hundreds, if not thousands of houses. And this is what remains of it here. It's broken a number of records. But also in Delhi, we've seen the coldest and the wettest days in the month of May in Delhi over the last two days. It's also right now destroying the mango crop in North India. So, you know, when I think of what the WHO head and others in this domain are telling us, it's still, you know, it just narrows your focus to a very acute problem that we have right now. But this acute problem is taking place in the background. There is, you know, a very chronic set of problems that are recurring.  
  
So we are going to continue to see cyclones. We're going to see floods starting next month. We are going to see local epidemics erupt in the middle of this pandemic, like Dengue and Chikungunya and other stuff that we have between August and September. I think, you know, this is the window of opportunity to unlock a lot of the potential that we have with us, which we were not able to do because all of us did not see the problem in sync. We did not pull resources the way we are being pushed to do now. So, it's a very happy question, David. And I really think we'll look back and say, not only were we working, of course, with some, you know, stats and spurts, but we overcame the pandemic. And on the way, we solved a lot of other problems.  
  
DAVID SANDERSON:  
And that's a powerful reminder, never to look at just single hazards. Do that to identify all. Raina, what's your best outcome headline?  
  
RAINA MACINTYRE:  
Well, I think echoing what Anshu has said, we tend to plan in very vertical ways silo'd, you know, pandemic planning is typically very health centric, but often the problems are not specific to the health system. There are other problems of governance, logistics, regulation and so on. So I think we need more to develop better ways of working across sectors and doing the preparedness across sectors so that people get the experience of working with other sectors.  
  
I mean, in Ebola in 2014, for example in West Africa, a good example was, you know, you have all these top level committees where people talk and meet and understand each other's perspectives, but on the ground, the operational responders, there was a lot of difficulty working together with different agencies and organizations coming in because there's zero communication at that level in the actual people who are doing the response. And I think we can actually go back to basics and think about even training and the way we do training of public health people, defence, law enforcement, emergency management, etc.  
  
Maybe it should be compulsory when you're training in those disciplines to do a rotation in another discipline, you know. So, a trainee in a public health person will do a rotation with police or with defence or with emergency management. And that way, not only do you grow a generation of responders who understand different perspectives, but they also have those networks that they build and the relationships that they built that become very important in a response.  
  
DAVID SANDERSON:  
Yes, life in silos. Every evaluation I've ever seen or I've been part of, an outcome is a silo'd mentality as opposed getting across the board. Those are the requirements to be agile as well. Any prediction of the future around building resilience is what agile institutions and not ones that are fixed and rooted in silo'd. Ronak, what's your thoughts?  
  
RONAK PATEL:  
Yeah, you know, if we were looking back five years from now and saying that we did something well, I would like to go back to addressing, you know, Anshu said that chronic foundation for what we saw driving a lot of these impacts on the poor and disadvantaged to be addressed because they are the ones that drive these acute crises and they're the same things that drive the chronic crises. And, yes, this was different that it was a global pandemic compared to more recent outbreaks. And critically, it was a pandemic during the modern times where we have so much interconnectedness of populations and economies, that there have been some impacts felt by wealthier societies and wealthier nations that they would meet that, you know, moment by making sure that we invested in the machinery to help prevent a lot of these acute consequences.  
  
But by doing that, we started erasing some of that inequity, some of that chronic vulnerability that led to these consequences. And if we can start working on that, then I think we've made real progress. Then we're not just preparing for the one next corona-virus pandemic, but we're preparing for a lot of the threats that we globally are facing and will be impacted by. But it will be, it will take that click of a recognition that we need to invest in that together to be able to do that. And I hope that's what we look back and say, this moment made us realize that in this interconnected world and time.  
  
DAVID SANDERSON:  
Well, I certainly hope so. And that seems like a good place to end. Thank you very much for an incredibly engaging conversation. Thank you to all three guests, Dr Anshu Sharma, Professor Raina MacIntyre and Dr Ronak Patel. Thank you.