



## The COVID Chronicles: Preparing for the Pandemic Podcast Transcript

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### **BEGIN TRANSCRIPT**

**Satchit Balsari:** Hello and welcome to COVID Chronicles, part of the 'India in Focus' podcast. My name is Satchit Balsari.

Six months after the world's largest lockdown in India, India is proud to declare that they have the world's largest recovery rate. Critiques both point out that India continues to under-test, that mortality rates are being underreported and that the pandemic that was initially restricted to a few urban centers has now unnecessarily ravaged the countryside due to the forced migration as a result of the lockdown.

Others have pointed out that India continues to test inadequately, that the private sector was not adequately mobilized early on in the pandemic to scale up our testing strategies and that what we are seeing in India is largely a manifestation of decades of neglect and lack of investment in both the medical and the public health sectors.

Joining us to help decipher what is going on in India is Professor Anup Malani. Anup is a Lee and Brena Freeman Professor at the University of Chicago Law School and a Professor at the Pritzker School of Medicine. Welcome Anup.

**Anup Malani:** Glad to be here Satchit.

**Satchit Balsari:** Anup, so what was India's response like? Was it strong or was it weak? Did the government in India, especially the central government overplay its hand or was it inept?

**Anup Malani:** In hindsight, I think it was strong but un-nuanced, and I think the main criticism might be the pace at which it accumulated information and adapted. So, if you see the epidemic, I think you want to start something like January 29th, that's when the first set of cases are seen in Kerala, some students coming back from Wuhan but as it turns out there are travelers that are ending up from different parts of the world, including Iran, coming into states in northern India. Okay, so you basically have one week during which there are a variety of introductions in India.

The first month, India responds gradually but mainly through travel restrictions, which kind of make sense. I mean you are trying to get a sense of what's going on, I don't think the world was aware of how severe this problem was, information wasn't traveling as fast as one would hope from the origin.

So, this continues for about six weeks into mid to third week of March, and then the government really begins to start taking some serious moves. So, the most important is the junta curfew that occurs on the 22nd of March, that's a voluntary curfew all day but compliance is incredibly high as measured by mobility data from various sources. Then there's a day off and then all of a sudden, the Prime Minister declares a lockdown, a nationwide lockdown, that starts on the 24th and continues. It was supposed to be a short-term lockdown but was extended repeatedly.

Now, what's interesting about this is if you trace confirmed cases and then you look at the actual severity of the lockdown as measured by mobility patterns; you see a massive gap. And if you think if you are woefully under-testing in India during this period, which I think is a fair concern, it's true in every country at this point, the reduction mobility is tremendous. It's more severe than the United States, it's remarkable. And so what you see is the country taking an effort to basically stop this pandemic, but at incredibly high economic costs. So, we see daily labors' wages fall roughly 90% during this period from say January. And it takes some time I think before you get confirmed cases up to a level where you think 'wow, was that lockdown required?'. But I want to say two things, the first thing is, when we look at the economic data, as it turns out even before the government responds harshly individuals start curbing their economic activity.

So, even in February, where you just see relatively mild travel restrictions, you see economic activity decline meaningfully, including wages and consumption declining meaningfully. People are taking this seriously, more so than say the press might let on or regulation might let on. Of course, it is much more severe once the government declare its junta curfew and then the proper lockdown, and you see this massive reduction. Now, at the beginning, if you look in hindsight, it seems like 'it is too much, why would you shut down this much of the economy for such a small threat?' and I think the problem here is that in hindsight, we know that it doesn't get severe until a little bit later, but at the time, it actually made sense. It made sense all around the world. The main, I think the most reasonable justification for these lockdown measures was, 'Let's shut down, it looks like it could be a major threat. Let's take a few weeks, a month or two months to assess the risk and prepare our hospitals, prepare medical facilities, prepare our distribution systems for whatever may be - care, preparedness etc, and then slowly release.

Now, India does slowly release. So, if you move forward, so you go through basically April and then you get to the beginning of May. On May 4<sup>th</sup>, India begins to release and it basically adopts a decentralized approach where it says districts that are more severe, we are going to rank them as, color them red, and districts that are in middle orange, and districts at the bottom green, largely rural district, and then we are going to have different levels of restriction process. That makes a lot of sense during this period but I think the main criticism you can make is that we weren't prepared, we did change the degree of the lockdown but it's not clear that we amped up the hospitals we needed to, that we had the proper medical facilities. We didn't do a great job.

In addition, there was a lot of heterogeneity, differences across states. States like Kerala, well ahead of the curve, other states and I don't mean to name names, but there are a number of states, often in the north, but not only in the north that were behind. I think there's roughly a correlation, with a few exceptions like Bihar, there's a correlation between how well performing generally a state is outside of Covid and how well performing it was during Covid, particularly on the health frontier. And so you saw that, so when you get to May, a lot of places are unprepared, some places are somewhat prepared, Kerala being the best probably, and we start gradually relapsing. And then in May you see this critical political shift, the central government was running things up say till mid-May and then when you had that second modification in May of the lockdown, we've already become decentralized in the sense that you have different rules in different places, you start beginning to hand over the decision making about whether you are a red-zone, a green-zone, or an intermediate orange-zone, to the states.

So, it's really critical at that point that the state bureaucracy is ready to handle this decision-making and that's the change you see. What's really amazing though is that economic lockdown really sticks for sometimes longer as measure of mobility. Things are creeping back up but economically we are still way behind and I think the data that are slowly coming out tell us that the Indian economy took a massive, massive hit and if you combine that with the serological data, some of which we've done in Mumbai and Karnataka, suggest that it's not clear we really stopped the spread and so I think a natural question that people are going to have is 'was it well-handled in hindsight?' Now ex-ante is a much-harder question, if you are in the driver's seat it's much more difficult but ex-ante we have high rates of spread and we have massive economic cost. The only solace is that the death rate was low.

If India's death rate were the US death rate, I think we would be much more traumatized, we would have suffered both economic harm as well as health harm. But fortunately we avoided the health harm fortuitously but we are still suffering economic harm, and what's really heartening to see is that a realization that's spreading and we are understanding that the key thing right now is how do we get India

back into growth mode. And the reason why that's important I think is two-fold. First is the economic cost of the lockdown disproportionately, vastly disproportionately affecting the poor.

**Satchit Balsari:** So Anup, you know, we've all seen pictures and videos of these migrant workers making the perilous journey back to rural India. What did the data show, how were folks affected?

**Anup Malani:** It's unbelievable if you compare, for example salaried workers, who saw maybe a 30% drop in income, and especially white collar versus labors, who saw a 90% drop in income and they were least able to handle it because they don't have a store of savings or the ability to borrow. So, that's the first reason, hugely economically disproportionate and the second thing as you know, you've been thinking about also is that India is at this critical period where it's still got a young population, mean age of 29, that's going to change, it's going to become like China with aging population. We have one, two, three decades really to kind of to catch up growth effectively and losing it right in the middle of that demographic boom, *boon*, I should say, is very costly.

**Satchit Balsari:** So Anup, you have summarized a fairly vigorous centralized response in the first couple of months of the lockdown and then you allude to this transition to a decentralized response. Critiques have said that maybe a cop-out, the government was aggressive, it found that its interventions had not necessarily worked as it had hoped to and basically back-pedaled and left the states to fend for themselves. The counter to that, of course is, as you correctly pointed out that in hindsight of course the lockdown seems to have been excessive but in February and March when you were facing the potential 1/6th of the humanity faced with a pandemic that we did not know much about, that it was important to be aggressive because you would, had they not done that, I can see many of us in the public health community also criticize the government for not being assertive, for not taking an action.

Now, what you point out is that the point of doing the lockdown is not just quell transmission but it's to buy time to prepare. Is it realistic to even expect the government of India to prepare? Can they compensate for seven decades of neglect in both the medical and the public health circles? What could you do? As a physician, I look at what preparedness means and we do not see how we will produce overnight or in a span of two months the physicians that you need to staff the ICUs, the public health capacity you need to do the testing or even improve the quality of the medical care that exists in India. Is it reasonable to say that India should have prepared in those two months?

**Anup Malani:** I think that there's two sides to the preparedness, on the one hand it's getting information, and on the second is doing something about that information. I think your question and your skepticism about what India could have done is appropriate for the medical side. Meaning, we were still learning about what the proper medical treatment protocol was, so you remember the discussion about ventilators and how to use those ventilators and the like. We were still learning about and still don't know enough about the extent to which centralizing care actually spreads the epidemic as opposed to curbing it, that is to say how much we should be doing this at PHCs rather than district hospitals and the like.

So, those are the things we need to learn about and I don't think we can expect a lot of the Indian government, I think the main, on the treatment side what would have been nice is to acknowledge that three quarters of care in India is done by the private sector and yet most of our response was on the one quarter public sector component and to expect it to treat it all of India is tough without knowing the scope of the epidemic, the distribution of the epidemic was and also having good grasp of the labor force that can participate, help labor force.

So, I think I would have liked to have seen the government call in the main hospital chains or at least some components of the private sector and say, 'look how can we tackle this problem together? What sort of mobilization can we do and what could it cost?' And in some sense for a country that can't do a lot of social protection because it doesn't have a lot of cash on hand, if I had to spend the cash, I would have spent the cash on getting that part right because that's how you keep the death rate down, especially when you don't know what's causing the death. And remember at this time, this is when we are hearing about Italy right and Italy's incredibly high rates and New York and New York's incredibly high rates, and you're thinking places that are more advanced were getting higher death rates, that's where you would want to focus. Okay, so that's the treatment component but there's, and I'll give the government a little bit of slack there, it was tough, I think that that's hard to criticize, but on the testing side I have a lot less sympathy.

First is, you have a lot of incredible labs in India, you and I know about the number of people that run these labs, we know that they're capable of scaling, they have been capable of scaling. Even to this day, they do a better job in some respects than United States, in India if you want to do an RT-PCR, you can get it done in 48 hours with the results; in US, in Chicago, you can't get it for six days.

So, it's possible for India to do that, they could have tested, they just didn't. And the reason they didn't, I think I'm going to be partly administrative, partly it's regulatory. So, let's focus on regulatory, India for a good number of weeks hadn't placed tariffs on testing products and inputs at a time when you needed to massively scale testing, and the explanation given was 'well we want to encourage domestic testing.' But we didn't have the testing capacity, we needed to import these reagents in the specific tests. At least until we have a domestic test producer, we should be able to import those tests and let labs do that. The second is, the government was very slow to certify labs. At this point, I would have gone ahead and tried to certify as many labs that are close as possible because some testing is better than no testing at all regardless whether you track and trace, just to know how the epidemic is spreading. And that's another thing we could have done. The third thing is I'm not sure whether we had great data management systems. I've worked with a number of states, I've seen the process of reporting to the center and I'm not entirely confident that the data going in was clean, well-organized, actionable. I'm not sure it is complete to this day; I think characteristic of this is the fact that there were tests done at the center and the results weren't shared with the population.

Those things put together make us think we just fell short on testing and there we have no excuse; this is not a hard problem to solve. We may not have had perfectly sensitive tests but again, some data is better than no data and we'd have statistical techniques to correct for this, at least with the population level. And let me leave you with one thought which tells me that we're still highly inadequate; what we need now as we prepare for the next phase, which is not just releasing lockdown but setting up for vaccine distribution, we need to know population-level data, what fraction of the population in each area, district, sub-district, even world level and cities actually have higher and lower problems because that helps determine vaccination parities. And we do very little population-level testing, we're still doing this contact trace, hospitals, travelers, there is more and more representative testing but we really need to see how that's done and make that data available, not just to everybody in the state that's acting as administrators but the population so that they can begin to determine when it's safe to return to work, what vaccination parties ought to be.

So, I think we could do a lot more on testing. One last point, I don't think testing is the solution, meaning, I don't think if you test you're done. I think what we really care about is doing test intelligently given what we want to do with that testing, whether it's treatment, suppression, vaccination. India is not alone in not linking the testing to that and that's doing kind of an unguided policy where the only goal is to increase testing for millions. Testing for millions is not the end, its intelligent testing that'll get us to the end but we're still falling short.

**Satchit Balsari:** Anup, you raised several important issues here, this challenge with not taking advantage of the lockdown to prepare adequately, some of which as we both agree, it was just impossible to do in India, especially on the clinical side though one may argue that centralization of the response and the focus on tertiary care continued for longer than it should have while it was becoming apparent that not all communities were going to face what Italy and Spain were by May and June. The focus continued to and does in many pockets in India remain on partially on tertiary care but you also then raised this issue of not collecting and applying data adequately and finally, this point about testing not being a solution, that testing also being a critical component of this link of interventions. Testing to quarantine, testing to isolate, testing to determine whether to contain or not, testing to figure out vaccine priorities, and what I hear you say through all of this is that it seems like the right kind of expertise wasn't at the table, there are consistently measures done that seem to be knee-jerk in response to what the world was doing, what seemed to be the politically expedient thing to do, maybe even with the right intentions but there were scientists in India that could have made the response more nuanced as one of your opening sentences, that it was strong but not nuanced. And there are several that have pointed out that the expertise for that nuance for bringing to bear the latest evidence in science existed in India and in addition, within the Indian expat community that had access to some of this cutting edge knowledge more rapidly than the government in India, only by proximity to the institutions that were driving the scientific discoveries elsewhere in the world.

And these scientists, both within the country and outside who wanted to engage and influence the decision-making in India seemed to have encountered multiple barriers. Why do you think that is the case?

**Anup Malani:** Yeah, I think you raised a very important issue. Let me just add one more fact to your list, which is just a casual screening of the discussion of Covid around the world, especially in the United States. If you look at the people who are thought leaders and if you look at their background, you will find a high percentage of them are from South Asia, also from India. And you'd think 'wow we've got a number of people doing critical research, whether it's on the medical side, trying to figure out how to treat and vaccination, or whether you're talking about people working through suppression policy or thinking about epidemiology. There's no shortage of Indians, now not all of them are prepared to just go and help the Indian government but I'm going to guess a very high number are, and to me I think one of the losses is that we aren't able or we are not willing to lean on that group. We do to some extent, obviously you and I are both sitting here in the United States but we are involved in the response in India in a meaningful way, but there's plenty of us here that I think more would be willing to be involved if they were accessed.

So, I think that's one thing that's too bad. India is very fortunate compared to many other countries to have its expats be so prepared for this but yet not relied on as much as they could. So, I think that's an issue but let me, this goes back to an old issue in India. India has two things that I think it has inherited as part of its political culture, one is distrust of a private sector and we talked about some of the problems that created and the other thing was kind of a nationalism that says, 'we can do this and we don't need foreign intervention, foreign help, we can come up with India's solutions.' And unfortunately, it is the case that our expats are also counted as foreign in many cases, and so we are losing out on a lot of resources. Now, by the way, when it's convenient we do like to bring back the capital like the expats have but I think when it comes to expertise, we are not as open. India is not as open as I think would have been helpful in this regard, so those two things, those cultural things, the anti-private sector and anti-foreign. And I understand the history that leads to that, I just think that we need to adapt with the times, I think those were two big issues that stopped us from doing a better job and getting expertise.

**Satchit Balsari:** Anup, you've studied systems around the world, what is it about governance in India correctly that while you write about hesitation to engage with "outside experts," the government did at its decision-making across state governments and central government have US-based consulting companies with huge operations in India informing critical public health decision making for these governments without the right expertise embedded within their teams. And so there is a little bit of discordance there where the articulated nationalism, the inability or the unwillingness to share information around data transparently with either the population or with scientific colleagues outside is countered by what seems like this bizarre presence of consulting companies in decision rooms, in governments around the world, this is not an India-specific problem, we've seen that in the United States. How best can scientists find a seat at the table?

**Anup Malani:** Yeah, so I learned two things on, let me first talk about consulting firms in a minute, I'll answer that last question about how scientists can get a seat at the table. I learned two things that I think are very important, both as an observer and a participant in Covid response in India. The first is I think I know why consultants have a seat at the table and this to the most kind of benign explanation but I think is also true is that when there isn't a crisis, we are often not involved in the day-to-day running of the government whereas consulting firms are putting themselves out there and engaging even when it's a boring campaign or boring project, they are there doing the work and they're building a relationship. So that investment of relationship during peacetime really means that when you are in wartime, i.e. Covid hits, if the government is trying to figure out who to trust to actually do the work, you can see that it might trust the consulting firm that it has been working with for the last five years than some scientist that just comes along and says, 'I know exactly what to do.'

So, that's one, the second is, unfortunately, consulting firms are in the business of selling services, they are not in the business of saying, 'Hey, I actually don't know the answer.' They have a strongly ingrained culture that says, 'I can always answer,' that's what sells and when the pandemic hit and they didn't have the expertise and the honest to good truth is very few of us did, they didn't admit that they didn't. They didn't have a lot of epidemiologists on staff, they didn't have people that had worked with infectious diseases on staff and yet they kept on saying they could do it. They put the same old consultants that were thinking about where to locate hospitals in order to maximize revenue, they're thinking about where

to put hospitals for Covid response, and that's not the same question. And I think that their inability to say no was an issue and even worse, their inability to go out and get the expertise. They could've, a simple solution could've been go out and identify the scientists that are best able, think of like classic Hollywood movies where the government goes and gets the top-notch scientists, right? Well, the consulting firms could have done that too, it's not hard. You can go to the university web pages and figure out who has written, go to Google Scholar, but they didn't do that. And I think one of the reasons they didn't do that is because they are in this world where they are worried about IP and academia and scientists are not as worried about IP as these individuals are and they're also worried about payment. They want to make sure they get paid but they are not necessarily interested in paying the scientists. Little do they know that a lot of scientists couldn't worry about getting paid, this was the first time their research being practically important and they were I think willing to sacrifice sleep and money to help out and I don't think consulting firms did their part. I'm hoping that next time that'll change but I think that's an issue.

So, then the question you asked is, how do scientists get a table and before I answer that question, I just want to point out that we have our own problems as scientists. There are a lot of us, we don't all agree and sometimes we speak out of our own area of expertise, sometimes we expand our expertise to stop other people from having good points, from making their points. We usually have a solution to this, it's called the workshop culture in academia where you and I from different departments will debate and maybe I'll make some good points, maybe I'll make some bad points, you'll point them out to me but we'll limit conclusions based upon that dialogue. Unfortunately, when we went into the public health sphere, we didn't take our workshop culture with us, so you had some scientists claiming that they knew the answers, another scientist saying the opposite claiming that they had the answer. The governments, even the ones that were open to talking to experts would have experts advising two different things and they didn't know, and they didn't have the expertise to know which expert was right. That's a fundamental issue and we need to overcome that, we as scientists need to overcome that problem before we can expect the government to go and talk to us.

**Satchit Balsari:** Anup, that's, thank you for raising that because at this moment in the United States, you have the White House embracing the Barrington Declaration, which to remind our South Asian listeners is a position that these lockdowns and containment strategies were the wrong measures and these sort of draconian quarantine measures are not the way to address this pandemic. Three scientists in particular have come forward along with the support of others to say that maybe the route that Sweden went but modified with a particular focus on protecting the vulnerable. So, what Kerala had said was reverse quarantine, let's figure out where the elderly are, let's keep them safe and maybe let the others inadvertently catch the infection so that you build herd immunity, which is the exact opposite of what several other scientists, a majority of the scientific community are saying currently that that is not the right approach and that it is not necessarily feasible. There are nuances to protecting the vulnerable that are operationally hard when you start thinking about the rest of the world and joined families and multigenerational families, it's not really practical to implement that.

The diversity of opinions of the scientific community has is healthy but the governments that needs the capacity to sift through the information that is being presented to them. Both you and I have had an opportunity to train in and work in two very different academic environments, both in India and U.S, and through my lens of medical training in India, I am deeply concerned that the quality of training has continued to deteriorate, we do not have the capacity necessary to rise to these kinds of challenges. In particular, when you talk about how the data were mishandled in addition to the nationalism around the data, the idea that the data should be concealed, there is some kind of a patronizing attitude as well about the data, where the data was collected by. Actually, let me bring that up separately because that's a totally different point.

You allude to challenges with data collection and application in my concern is that there's not just the right kind of training available in the medical and public health community in India to process these data. If you think about where the models were coming out of, in India they were not coming out of medical college campuses, but they were coming out of the IITs and our computer science schools, all excellent experts in modeling but none of them infectious disease epidemiologists and this problem won't get fixed unless there are serious investments to the scale and the expertise we need in medicine and public health. How do you envision this at this moment in India, with the current government and their willingness to engage

with the private sector. which they failed to do during this pandemic response, what are the practical regulatory changes you would like to see that would provide the expertise India needs to face these kinds of challenges?

**Anup Malani:** Before I answer that question I want to quibble with one thing, we have a temptation to view the central government as one entity, the central Indian government as one entity. And anybody that's dealt with the central government in the last six months knows that there isn't just one entity. There are a lot of components, Ministry of Health, NITI Aayog, ICMR, the PMO. Just a lot of different groups and they are not always rowing in the same direction and so the challenges the PMO faces is to how to get everybody row in the same direction. And to be clear, this is the exact same problem in the US, whether you think about the head of the government should be Congress or whether it should be the President, let's just stick with the President for a second. You know, whatever you think of the president's policies, one of the challenges that an executive had and it was an executive that would had a problem even if you look at the previous president, is how you keep the FDA, the CDC and all the different parts, the CMS, all rowing in the same direction. And it's difficult because each of those people think that they have expertise, each of them want to have control, you know you're selecting for people that are 'we are leaders we can do this' and sometimes they have even more base concerns about making sure that they get credit. So, I think that it made it really complicated, one of the things we saw was sometimes one part of the government would say, 'look, how do we address the other part of the government and get them to be more cooperative or do more of this and less of that.' I think that means it's very hard to just say that the central government didn't do enough.

Okay, that was a long quibble but hopefully it made clear that the central government is not a monolith, they have their own issues and I think that's an entire discussion in itself. But I think you're right, I mean what was really interesting about this was and by the way this was not unique to India but more so in India, if you looked for quantitative modelers, like the people who could have checked to see if the imperial college model was appropriate for India, applied to India for appropriate etc. There's just not a lot of Indian epidemiological modelers out there in the world. They do exist in the Europe and the United States, they weren't always brought in, I think there's one or two examples that were brought in, but they weren't all brought in. Even in the US, there are not a lot of modelers to go around and so you do see, for example, my home state of Illinois, it was a pair of physicist I think at the University of Illinois that came in and did predominant modeling for Illinois. Now, there are and good friends of mine could have done the work, there's a separate question of why the government relied on physicists when they could have dealt with epidemiologists but there is a shortage even in the United States, it's just much more severe in India.

To correct that going forward is easier than to fix the problem in hindsight. We didn't know that there was going to be a massive pandemic and so India was caught unawares. If you look at East Asian governments, they had SARS, even in India the most successful government was Kerala who had NIPA. So, they had some prior experience and they knew they should they be prepared. I think there is a chance we will be prepared for Covid 2.0, hopefully it never comes, but I think we will be more prepared and part of it is going to be those physicists are really helpful actually, they have really good modeling skills because they need to just work with biologists, microbiologist, epidemiologists to see what aspects of those models are good and what aspects were bad and one of the things I worry about is the people that came in to do, they just kind a picked up modeling really quickly at the last second, they don't understand that the epidemiologists have been working on this for decades realize there are things that models are good for and there are things that the models aren't good for, and so the physicists are more likely to take the models seriously, whereas the epidemiologists understand there are caveats.

Now that may not be the impression that you get given what came out of the Imperial College, the kind of the UK modelers, they seem to say models solve everything. I think that's an incorrect view, they are insightful but of limited use in terms of forecasting past a short amount of time, unfortunately a few small epidemiologists took it really far and that might have given physicists a sense that we could also go with nuts with modeling, but I think the proper answer is it's useful but it should be cabined by the data. When the data tells your model is wrong you have to alter the model first and not just stick with it.

**Satchit Balsari:** You know in disaster medicine, Anup, the challenge always is that you cannot, it is hardest to prove when you are very efficient, right. So if you are investing in disaster preparedness, in mitigation, and in response, it is hard to prove the counterfactual, you'll either avert disasters or you will not have the sort of morbidity, mortality, suffering that you would have had were you not prepared and so it is very hard once the disaster is passed to convince governments, societies, communities to invest in these disasters. Memory is short, and people forget, we've seen this with floods, hurricanes, and earthquakes. Around the world, there is a lot of attention focused on disasters and the immediate aftermath of events, but for rare events it is extremely hard to continue to engage either societal or government interests in these kinds of investments. It is even harder in societies where the socio-economic buy is not very generous and you have to prioritize resource allocation: Do you invest in infectious disease epidemiologists in India or do you invest in figuring out how to solve the hunger crisis we expect in 2021. And others may argue that these are our false choices. In your experience, how best do you incentivize institutions to prepare for these long-term uncertainties? Is it the government that will step up to do this, should it be the private sector, how do you fix this problem to prepare for the future when there are so many pressing emergencies that are staring at us in the face of India?

**Anup Malani:** That's a great, and arguably the question of the hour once you look past the current crisis. So, I will say that there is, I am going to give a glib answer. The way to get a government to best prepare is for the government to experience the crisis unprepared, then they'll change. I think that the example I gave before was SARS in East Asia, actually before SARS in East Asia is the Asian flu crisis that occurred with regularity since 1997. I think it really made these East Asian governments much prepared because they saw it over and over again. Now, the next best thing is not to experience it yourself but to see somebody else experience it unprepared and then learn, 'hey if we don't prepare, we could end up like this other government that did it poorly.' In some ways, Covid was helpful in that regard because some governments were more prepared, some were less prepared and you saw a difference in outcomes, so that's going to be a good signal.

But I think that there are some crisis that especially are far off that are really difficult, I think the elephant in the room is climate change and the problem with climate change is it's not here, I mean it's here but it's not here in the sense of sea levels have just risen three feet in level and as a result it's very hard to get people get motivated. And it's not like governments are just sitting around doing nothing with the money, they have concerns, there is global poverty and that's gonna be worse and they'll have to deal with that. Other than climate change, there's also by the way pandemics and things like that, level-one military threats and security threats. I think the fundamental problem that governments face is the following: There are hundred different threats, fifty different threats and you only have the money and resources to deal with ten and you have to choose which ten. And everybody, there's every crisis we've ever had there's always somebody that says I warned about this, right? And the problem is that's true about every crisis, somebody is warning about every crisis the world could possibly face and the government doesn't know which is the more serious. And I think what it ends up doing, not always intentionally, sometimes because of just inability to act is that they wait until the crisis occurs, well that's what we should pay attention to.

So, let me give you a great example, even though it turned out disastrous, take the United States and 9/11. People have been worrying about terrorism in the United States for some time, in the 1990s, we even had an event in 1994, people didn't take it very seriously; then 9/11 happened and look the entire government began to take it seriously. The way you did air travel changed, you started two wars in the United States, we made a big difference, arguably that's highly ineffective or maybe even counterproductive but the thing is we didn't act before and then we overspent later, this is a very common thing.

By the way 2008, financial crisis, global crisis but particularly in the United States, we set up a bunch of rules about systemic risks, we didn't do it before, it's not like people weren't warned before, even Raghuram Rajan was warning about it before we waited till after. And we are going to do the same thing with Covid. So, I think that we will be better prepared for Covid 2.0. I will tell you the thing that I am most thankful for, this is going to seem really weird, is that Covid wasn't worse. What I mean by that is the following: Covid is bad, it's worse than flu, even if you don't buy it on the death rate, you should buy it on the fraction of the population that are infected. The right comparison for Covid isn't the seasonal flu, it's the 1968 first introduction of H3N2, it's the first introduction of a global flu that's really comparison. And then, you can see even then Covid's pretty bad in terms of total death rates, total death around the world,

but the thing is it could have been much worse and what I am hopeful for is that we've learned from Covid 1.0 and then when the more severe Covid comes along, and god forbid it does, we will actually be in a position to do something, including all the things that I think you've mentioned, which is taking the advantage of scientists and leverage their expertise, resolve our own conflicts first, but leverage their expertise and then second, figure out how we are going to leverage the private sector and get the private sector to be appropriately modest but helpful.

**Satchit Balsari:** Thank you. Before you said the last sentence, I was wondering where you were going with it and was wondering if an economist from the University of Chicago was calling for more regulation and stronger government. Anup, I wanted to go back to the question about data because as scientists, that is something that we prize dearly, it is the foundation of the evidence we generate. Access to data has been a struggle in India for a variety of reasons, it is not only the lack of capacity to generate good quality data, especially clinical and public health data largely because our digital health ecosystem is nascent but also because all health care workers are overburdened, whether they are community health workers, the ASHA workers, the Aanganwadi workers, or your general practitioners who are seeing hundreds of patients a day and out patients clinics in the public hospital.

We just don't generate the right kind of data and of the data that we do generate, there are large volumes, the digitization, the collation, the transmission of these data are slow, they are challenging and when they are collated, of course, the analytic capacity as we discussed earlier also doesn't exist. At a time when transparency in data - having information about local infection rates may have been approved in strategy, especially given that the scientific community is aggressively moving towards transparency in data, accountability in data, peer-reviewed journals expect scientists to now not just publish the results but also share the data base in which these results are published.

It is now the standard in medical journals to do so. We are also faced with governments that are extremely worried about data being misused by foreign entities and not unreasonably, so if you look at the kinds of cyber interventions governments around the world are facing including the United States and the implications on its elections as well. So, therefore when our community of scientists, Indian expats are disappointed that they are unable to have an opportunity to leverage their expertise even in the midst of such crisis by not having easy access to these data in partnership with the local communities, it would be reasonable to say that, 'Well, we are ignoring the fact that the government is justifiably worried about data sharing across international boundaries.' In fact, in the private sector the world's largest data brokers have had to grapple with the GDPR regulations in Europe, just a year before the pandemic. Do you see the private sector being able to provide solutions to safer privacy preserving approaches to data sharing or do you see it as the problem?

**Anup Malani:** I really like your framework, so I am gonna answer within the framework. But the short answer is gonna be, I think the private sector can do a lot more. If you compare the United States and India, all the problems you see in India, you see in the United States as well but the degree is much less because of the role of the private sector and the co-operative nature or co-operative interactions between the private and the public sector in US when compared to India.

Let's use your structure, I love it. First is overburdened workers, who are the ones that gather the data, the second is a digital platform to handle the data, the third is sharing the data so there's transparency, you can get a lot of people involved, and the fourth is analytic capacity.

Now, India has a very large workforce which you are exactly right, ASHA workers and the like are overwhelmed but again that's when we focus on the government. There is a massive unemployment problem and there are tons of people we could train in the private sector and do data gathering. In fact, I have worked with organizations that do that, not just like the Morsels, the J-PALs, the Neilsens of the world that do surveys work on the private sector but also, non-profits like SEWA that are trying to get their workers, their members to become data gatherers as an occupation. I think if we leverage that as a private sector, we could do a lot more and in the United States we do leverage them a lot more, it's not just government workers that are doing data gathering, there are tons of, again Nielsen would be a great example but tons of different ways that we gather data both with labor and with electronic devices.

The second is a digital platform, here interestingly I think India is behind and ahead at the same time. In the United States, the real problem with digital health is that we don't have a common platform and we

have basically one maybe two large players, one I think really. And that player has a strong incentive because of its clients to make it, so it's hard to get data. We use inconsistent data platforms even though it's the same company, you and I both know what company we are talking about, we use inconsistent platforms against across health care providers, different hospitals to make it hard for patients to transfer data, for us to extract that that data and the like. Privacy is going to come in just a second, it can be helpful, but it can also be a hinderance to effect the public health and even private health, but we don't have that in India.

In India, we have no common platform, nor do we have big data players because EHRs, electronic health records, are so primitive that's going to change but here the Indian government should just learn from the US. It should set up a common data platform but not be super rigorous about it, it should make it enough so that people can transfer their records they can have, one hospital can use one provider of health records, another one can use another one and there's software competition. I think that would allow you to get the benefits of private competition without monopolization and friction we are seeing in the United States and India is slowly moving there I think that's gonna be really critical and if they do that but then allow the private sector to get involved, I think you'll have tremendous digital capacity in India.

So, that's second, I think I am very optimistic on that one, where I am very pessimistic is I think where you're pessimistic, which is on sharing. India has a terrible record about sharing data. It gathers tons of data as it turns out, tons and tons of data but it takes forever to share it. For example, the 2011 census data is still not fully out, it's shocking and we are going to do another census now. When we do public health response and we need to figure out what is the rate of prevalence of disease in the population, our best population estimates are from 2011 and there are mid-year estimates that the government does but it doesn't share that publicly. And so even basic rudimentary things are missing, and I think the reason why the Indian government doesn't do that is in part because of accountability. This is kind of the conundrum of democracy, the concern is 'I'm a bureaucrat, if I release this information, it shows something bad, I'll get blamed.' So, what's the answer? Don't reveal any information, don't share anything. If you don't share, where you only share your successes, you can't get punished politically. And so I think that's a real issue, in the United States, we don't have that as much, we understand that in the current climate there are some concerns about whether there is selective data sharing but we have such institutionalized sharing obligations and culture that it's very hard to hide things in the US relative to India, although even here we could get better.

And again, in the US, we are not as concerned about foreign, which is fine, I don't think that it's that big a threat, in India we are very concerned. But as I mentioned before, a lot of our human capital resides abroad in the form of expats, we can't use those people if we are going to be very skeptical of foreign. It might be that you stop the Chinese, the Americans, or whoever you are worried about but you also hobble yourself. The last is analytical capacity. I'm not sure the consulting firms have all the necessary analytical capacity but they have some, but India has a great human capital base, not just in its own universities but also abroad that you can dry in. So, again, we want the government to be more open to cooperation with the private sector, including the academic sector.

**Satchit Balsari:** Anup, I want to leave you with a question that is close to your heart and it's about capacity building. You are the co-founder of the International Innovation Corps (IIC), a social service program that sends teams of students from your university to work with government officials in India and Brazil. How do you take an enterprise like that at scale? How best can you affectively develop this capacity capacity within these countries? I mean it is great to have access to your expats, but brainpower has never been India's weakness, we have some of the world's best scientists and researchers in India, working from India who've never left. How do we best bring to them the latest tools and technologies, the methodologies that are available elsewhere to the scientific community in India?

**Anup Malani:** Yeah, and I want to be very clear, at no point did I mean to suggest that all the highly capable people leave India. You can make an argument for substantial brain-drain back in the 60s and 70s but I think it's very, very hard to make that argument now that the burst in capacity and the skills in India is remarkable, especially at the right tails. You and I, we've both have had the privilege to work with just incredibly smart individuals that are at Indian institutions. So, I didn't mean to say that but I do think that there's a fundamental problem. And I would say that's not just for the scientists that are in academia but also for people that do just as important stuff that doesn't involve math and labs, which is logistics, it's incredibly hard problem, you need to have very sharp mind to deal with logistics issues, to get things

done at scale. There are a lot of those folks in India and they happen to be in the private sector, they are the ones that run hospital chains and retail chains and manage delivery services, it's remarkable actually. And by the way, a hidden story of this epidemic is the role that the private sector in logistics played in keeping everything functioning in India, that is a book to be written.

But, why is that occurring in the private sector and not in the public sector? I think that's the key issue and it's what explains why we formed the International Innovation Corp and its wages, the Indian government pays low wages. It used to pay wages that were I think competitive with the private sector back in the 60s, maybe the early 70s but since then the private sector has boomed, wages have risen and it's very hard to attract anybody but the most die-hard people that are most committed to the government into the government. So, you do have a remarkably big and remarkably smart IAS corp but the IAS is tiny relative to the population of India.

If you took the total IAS population, which is in the few thousands and you compare it to the billions, you know 1.4 billion that are in India, India is one of the smallest bureaucratic machineries possible. Now, it does have, it's supplemented, I mean India is a large employer, so it supplements with state bureaucracies and it supplements with other workers but again, the wages that it's paying are not fantastic at the right tail, meaning for the people who have a lot of human capital. Those people are going to earn more in the private sector, so they go to the private sector except for a very small number, as I said.

Now, so what do you end up having in India is that the private sector has the right tail of the human capital and in order to get access to that, we need to be able to either have private contracts or the government needs to increase its wages at the right tail. I think the contracts are just much more feasible than increasing wages given the culture of Indian government and so what we try to do is trying to figure a way out to do that. The IIC is an effort to offer some wages that are somewhat between government wages and private sector wages to encourage people who are a little bit more open towards doing development work to kind of work with the government for one to three years. Really our hope is that they will get a taste of public policy, get a taste of public service and then change their mind and choose that direction. And the Indian government could help in this regard by being open to laterals and working with other organizations like this. I think you are seeing that more and more, especially in the more progressive parts of the Indian government. The flip side though, I also want to point out there's a middle of the human capital distribution, I do not mean to denigrate them, they are critical if you want to do anything at scale, while they might not set the plans, they are the ones that do the execution.

What's really interesting about the Indian government is that if you wanted to survive this lockdown economically, you wanted to be an Indian government employee whether that's central or state. And the reason is that they have really good wages for that human capital level and salary, something much closer to salaries than day laborers. And so, when everybody else was taking a hit, they were comfortable, it was an immense form of social protection, and we needed that and we will need that as we scale up our vaccine distribution program. So, it's a multifaceted issue depending on where at the human capital scale you are, but it does involve cooperation with the private sector or increasing wages.

**Satchit Balsari:** I want to wrap up, but I do want to acknowledge a couple of very cool things you brought up, Anup. One is, there is the private sector, it's untapped, there's a mismatch. You have skilled folks but they are likely more in the private sector right now and they're untapped or not the right kind of expertise. So we need to strengthen mechanisms to do that but it doesn't mean that it happens at the expense of the public sector, you can continue to invest more in the public sector and you need to because the markets will fail at certain times and the pandemic is one where your millions of wage laborers don't have wages and then what do they have to fall back on except schemes like MGNREGA, which are meant to exactly provide that kind of social protection.

Anup, you raised very important issues during our discussion and what I hear you say is that the government must rethink the way it is making investments in both the public and the private sectors. A lot of the skills that we need right now and the correct kind of expertise that we need is all in the private sector and those investments need to be strengthened. At the same time, markets will fail during certain exigencies as we have seen with the pandemic and the millions of wage laborers that overnight lost their daily wages, which is critical to keeping them out of poverty and it were the social safety nets finally that protected these people to some extent, you know schemes like MGNREGA which have often been

critiqued as excessive largesse proved vital in protecting people during this pandemic. And to paraphrase or to be so audacious as to attempt to summarize what you were saying, you are saying that India really ought to invest in the greatest asset that India has and that is her people.

**Anup Malani:** Yeah, that's a good summary. Although the way to invest in it is not entirely simple or obvious, a lot of it is allowing the private sector to do its own investing, including its population. I think that will be critical. One thing that we did not touch on that's critical is, not doing it for people that are in their 20s and 30s, which is the workforce today but who are the people that are going to help India the next time there's a crisis? It's people that are 0 to 20 today and we really need to improve public education or allow a well-regulated private education system to develop that's available to a broader population if we really want to do that investment. Sometimes that involves government, like I said, stepping forward, sometimes it involves the government stepping back and allowing the private sector to do its thing, but we need to invest in its people.

On that topic, one of the most interesting books I've read is a recent book by Ajay Shah. Ajay Shah says, makes the argument that India is a low-capacity government that thinks it's high capacity, as a result, it regulates like its Germany or the United States, but it has the capacity to enforce that like India does. The result of that is you have overregulation which instead of actually improving education, improving consumer goods etc. ends up creating opportunities for corruption because there's only the ability to do selective enforcement. So, what we end up with is lots of regulation, lots of corruption, no safety, no quality. To fix that, we need to acknowledge that we have limited capacity and become a little bit more of a libertarian state, I think the keywords in his book is 'libertarian by necessity not by design.' If we do that for a little bit, we might be able to build the capacity and then become a government that can handle regulation, execute on regulation like Germany and United States. Until then I think we have to sit back or cut back and rely on the private sector to help us solve a lot of these problems, including investment in human capital.

**Satchit Balsari:** Anup Malani, pleasure as always. Thank you.

**Anup Malani:** Thanks Satchit, thank you for having me. I enjoyed the conversation quite a bit.