

Kelly Brownell:

Hello, and welcome to another edition of Policy360. I am Kelly Brownell, Dean of the Sanford School of Public Policy at Duke University. Today, we will talk about what happens when there are very high hopes for a particular policy idea, and then researchers conclude the results are not as promising as they once seemed. Are there lessons to be learned from this? My guest is Manoj Mohanan. Manoj is an assistant professor at the Sanford School of Public Policy at Duke. He is also appointed in economics at Duke and is an assistant research professor in the Duke Global Health Institute. Welcome, Manoj.

Manoj Mohanan:

Thank you, Kenny. It's great to be here.

Kelly Brownell:

Well, I'm delighted to have you here. Your work is really groundbreaking in interesting ways, and I'm not the only one that's noticed this. You've had a good bit of attention for some work you've published recently. I'd like to talk about that. We shared a video on the Sanford School's Facebook page recently, a video that went viral. The video was shot in rural India in Bihar, and it features you and your work and your research showed that in a claim social program that seemed at first glance to be having tremendous impact, in fact, failed. The telemedicine project combined the business model of a franchise, say like McDonald's with new media and healthcare. So let's start off if you wouldn't mind by describing the Bihar region and what it's like.

Manoj Mohanan:

So Bihar, it's a Northern central state in India. One of the largest states in India with a population of over 110 million. It's a rural state, very, very rural state and has some of the worst population health indicators globally, and has been sort of one of the largest challenges for development and health in India. And one of the things that this project hoped to do when it was rolled out was to really try and address the question of improving quality of care available to its population.

Kelly Brownell:

So it sounds like there's great need for better health care in that area. One can imagine there aren't many trained doctors. Is that true?

Manoj Mohanan:

Yes, indeed. There's great need partly because of the fact that there are few qualified doctors, but as some of our own research has shown in the past, even the qualified doctors who are practicing in these areas provide care that is not by very different from the ones without medical qualifications.

Kelly Brownell:

How can that be?

Manoj Mohanan:

So what happens in these settings that we find is there is a significant gap between what providers know and what they do, there's know-do-gap and it reflects the lack of incentives and the lack of accountability for providing high quality care. Some of it could be because of lack of information, the information asymmetric problem, some of it due to lack of accountability and the market incentives are

over providing poor care and under providing the right kind of care. It was in that context that these new technologies like franchising and telemedicine we had hoped they would improve the quality of care that's being provided in these areas.

Kelly Brownell:

We'll come back to that in a minute and I'd love some more detail. But before we begin, when you were saying that there are trained and untrained people delivering healthcare, but there's not much difference in what they actually deliver. It seems surprising because you'd figure the trained people would know more and would be in a position to deliver more evidence-based care, let's say, but apparently it's not happening. And you were saying there were market incentives that were making this not happen. What would some of those be?

Manoj Mohanan:

Partly that there is a selection of people who end up in these settings. So when you talk about people with medical qualifications practicing in rural Bihar, they're very different from the kinds of MDs that would be practicing in the five star hospitals in Delhi. So when we think about trained medical doctors, there's a difference between these two types. In terms of the incentives, a lot of the market here is for prescription of drugs. Patients come into your clinic, they have very little time, the doctors spend very little time and ask very few questions. And in that kind of a setting where much of the margin is based on the number of drugs that you prescribe, there is a tendency to over prescribe drugs and under prescribed things that might be life-saving like for example, oral rehydration solution for childhood diarrhea. Although over 70% of the doctors and healthcare providers know that they're supposed to do this and they'll tell that to us in our interviews, in practice less than 20%, 25% of them actually do. So that's the big gap that seems to be consistent across qualified and unqualified providers.

Kelly Brownell:

That really is a remarkable finding. So let's just take the case of childhood diarrhea that you mentioned, and there's a standard protocol for addressing this. They know about it, but only 20% of them actually provide it. So what do they do instead, or what happens to the children?

Manoj Mohanan:

This is the sad part. A lot of children get unnecessary antibiotics without even establishing that this is a case of diarrhea that needs antibiotics. A lot of them get steroids. And we actually, on our website, we have an Excel spreadsheet listing the thousands of different types of drugs that are prescribed some of which are frankly scandalous, because there are chemotherapy drugs that are on that list. So it's a very disturbing scenario where we see systematic under provision of appropriate care that we think after knowing about ORS for so many decades, everyone should know about the under provision of that. And at the same time, the market forces are driving these guys to prescribe drugs that are likely harmful, not just unnecessary.

Kelly Brownell:

So a chemotherapy drug prescribed to a child for something completely different could have very negative consequences, I might imagine.

Manoj Mohanan:

Yeah.

Kelly Brownell:

So some of the doctors are doing this because they're incentivized for prescribing something, doesn't matter what it is, it sounds like.

Manoj Mohanan:

It probably is, yes.

Kelly Brownell:

Okay. And then the fact that that drug might happen to be available. So let's return to the study that you've done recently. So could you describe the concept of telemedicine and how this franchising idea works?

Manoj Mohanan:

So one good place to start is that after six decades of various health policies India tried to try to train, recruit and staff doctors in rural areas the experience has been generally that it's really hard to do so partly because doctors don't want to live in areas where there aren't good schools, good electricity, roads, so on and so forth. So most of the care, about 80% of care in rural India is provided by healthcare providers who have no medical training whatsoever. And often they'll have some exposure being a pharmacist assistant or a doctor's assistant in a small clinic. So when the government of Bihar entered into a very strategic memorandum of understanding with the Gates Foundation, one of the ideas on the table was to see what technology could do to help leapfrog this problem. That is rather than trying to recruit staff and train doctors in these areas, work with the existing set of healthcare providers and see what we can do to improve the quality of care that they provide.

This idea is not without merit. It's in some sense, even if they can improve the care that is provided by the segment a little bit, that could have massive effects for the population. So the two parts of the business model were, one was to work with franchising clinics, the idea was you create a standardized set of protocols for standard operating processes, supply chains, the kind of drugs and supplies that you receive, and also provide some training so that they do the right thing, they adopt better diagnostic processes. The diagnostic technology through telemedicine was to help refer more complicated patients.

And in addition to that, when I as a telemedicine operator or a small healthcare provider observe the doctor sitting in a large city, the way the doctor is interviewing his or her patient, I might learn in the process as well. And then there's of course, the market competition that when a neighboring doctor start providing better quality care by technology or by franchising, then I as another doctor in that same market might start improving my quality as well. So that was the overall concept.

Kelly Brownell:

So if I'm a healthcare provider, perhaps not very well trained in that area, I could potentially benefit from this by watching other people electronically do this so I can model what they do. Can I consult with them about particular cases?

Manoj Mohanan:

Absolutely. There was a system where they could reach out to them either through the telemedicine interface, which is an audio video internet based interface, or just pick up the phone and call for help as well.

Kelly Brownell:

All right. And then also this would be a way for me to learn best practices and standardized protocols.

Manoj Mohanan:

And receive better quality drugs at a discount, better supply chain management, inventory management, so on and so forth.

Kelly Brownell:

Well, I imagine there were high hopes for something like this, especially given how underserved this part of the country is.

Manoj Mohanan:

There was and the hopes were both from the technology and the business end. It's interesting to note that the year after this technology was introduced, globally several organizations awarded this group that was introducing this technology, all kinds of international awards for entrepreneurship and technology. In fact, the underlying technology platform, the company that created it had a big write-up in The Economist magazine, The World Economic Forum, and The School Foundation gave the NGO that was implementing the program awards. So everyone had very high hopes for this working out.

Kelly Brownell:

So it sounded like this was a pretty happy story in the beginning. And the company running this project is called World Health Partners-

Manoj Mohanan:

That's correct.

Kelly Brownell:

... and apparently they provided some data showing that the program had great promise. What sort of form did those data take and what kind of information did they make available?

Manoj Mohanan:

What WHP, the World Health Partners was trying to point out was that they had delivered a lot of care, volume of care over this time. So I think as of now on their website, they talk about several million children receiving treatment for diarrhea and pneumonia. That is true and that might well be the case, the problem is what one needs to understand from our point of view, which is an evaluation point of view is what did those healthcare providers do as a result of the introduction of this program? So if I'm a healthcare provider who was treating 100 kids last year, and I still treat only 100 kids this year, then the program has had no effect. What we really want to understand is the marginal effect on the volume and quality of care, which you cannot do simply by looking at the statistics that WHP has been presenting.

Kelly Brownell:

You decided then to dig deeper than just that one statistic about how many children got served as an example. So how did you conduct your research?

Manoj Mohanan:

This actually goes back even further. Right from the time that WHP was working with Gates to develop the program, we were fortunate to be at the table at the very early stages and then what we had done was to modify the implementation plan to turn it into a large cluster randomized study that was spread over 360 study sites. For a range of reasons, the implementation deviated significantly from what was the experimental protocol. But because we had really good data, what we were able to do was to essentially compare the change over time in the implementation areas versus the change over time in the non implementation areas.

And that helps us understand if any trends that we observe in one of the implementation areas or the implementation areas in general, is that really because of the program or not. Especially in our study or in this particular setting the reason this is so significant is Bihar is one of the most rapidly growing states in India. I think at last count, we were looking at per capita state GDP growth of 11% per year, which is massive. And when that happens for four or five years, we do want to account for all the trends in the non implementation areas as well.

Kelly Brownell:

Why is the growth so heavy in that area?

Manoj Mohanan:

Well, one unfortunate truth is when you start low, growth is much more rapid when you're starting that low. So on one hand it's great that there's rapid growth, but they're starting from a low denominator. So that's one part of it. The other is the government has done a lot of things right in terms of investing in technology, investing in infrastructure. I think during the previous regime, the government had built some 27,000 kilometers of road during one administration.

Kelly Brownell:

So we'll loop back in just a minute to what the results were of your study, but with this economic development, would it not be the case that this would bring with it better healthcare, better resources, more wealth and things like that?

Manoj Mohanan:

Absolutely. And all of those are reasons why we need to be careful to compare the areas where the program is implemented with areas where the telemedicine program is not implemented as well.

Kelly Brownell:

Okay. So you did a very careful evaluation then of how the program was being implemented and what its impact was. What did you find?

Manoj Mohanan:

We found several things. First we found that none of the population level outcomes which the program was targeting, which has mainly childhood diarrhea and childhood pneumonia had any effect at all. And it raised the question, "Well, if we don't see any effects on the main outcomes, then why might that be

the case?" We find answers, several answers that I think are really important in this context. One is we do not find that the market penetration was very high. This was one of the fundamental assumptions of the program that they assume that by the end of three years or four years of implementation, the program would be able to serve about 10% of the population in these areas. What we find is it's closer to 3%. So when you are able to touch only about 3% of the population to accomplish any significant change in the population health level, it's just not going to happen.

So the question was, "Well, why is that population level reach, that reach only so [inaudible 00:14:25]?" Two reasons why. One is that not too many healthcare providers signed up for the system. Now, a franchise program essentially requires me as a healthcare provider to pay a certain amount of money to join the system. And my decision to join might depend upon how well I'm doing. So if I'm a healthcare provider with a thriving practice, I don't have any reason to invest more money and join the network or my reasons to join might be lower relative to somebody else who is new in the business, or who is seeking to really expand their market clientele. And that's what we find is some of these doctors are younger, they are relatively newer, they have less experience.

We had, however, hoped that the introduction of better quality care would mean that patients would be drawn to better quality providers. Ironically, there is no empirical evidence we know of in developing countries which says something about the market level response to quality improvement. So this was a big assumption that everyone was working on. And what we find is there's no evidence, at least in this study where we can see that the patient level responses are actually in favor of the demand. That is, we do not find evidence that patients were going to these healthcare providers a lot more often than other providers.

Kelly Brownell:

Is it possible to know from your data whether the 3% of doctors who were involved with the telemedicine franchise, if their patients had better outcomes? The reason I ask is if it were true that those patients did better than it would just be a matter of scaling up and getting better access. But I'm curious to see what you found with that.

Manoj Mohanan:

So we tried to look at it in several different ways because the number of patients were, A, small, and there is always a self-selection of who goes to which doctors, it's harder to answer. But what we tried to look at was the intensity that is areas where there is more intense implementation of the program. So areas where there are more networked doctors versus areas where there are less network doctors, if there's this relationship holds, and we don't find any such result. We don't find any evidence that this is simply because of scale of implementation. Now, it's entirely possible that the scale effects kick in only after you reach 50% of the population, or 50% of the doctors, which is an entirely different margin if you will, we are still talking about going from single digits to high single digits.

Kelly Brownell:

So this is sort of a blue sky question, but if you were a funder like the Gates Foundation or other people who were supporting some of this work, would you be in favor of expansion of this further testing of it? Would you give up on it? Where do you think that all stands now, given what you found?

Manoj Mohanan:

I don't think it's time to give up. I say that for two reasons. One is, this was a unique project that brought together two promising ideas, telemedicine and social franchising. Independently each one has its own values. And I think still need to find significant studies that show the empirical evidence in favor of whether or not each one works. That has not yet happened. So it's a little early make the call on whether this works or not. What I would do if I had funding decisions to make, would be to start slow, to first ask implementing agencies to demonstrate evidence on a small scale, but not so small that you cannot replicate this and not in a manner that is purely driven by selection.

So do small studies, but do it very carefully and demonstrate it can happen and then scale it up in phases. And even as they scale up, there's no reason to build in robust design that you can evaluate as you go along. Part of the reason I say this is social franchising, for example, is a multi-billion dollar business today. And when the last Cochrane Review on this topic was done, there was not a single paper that met criteria for inclusion in the review and that tells us the need for empirical evidence in this area of work.

Kelly Brownell:

Thank you for doing such important work. You can only imagine how many lives this could potentially affect because in the absence of careful evaluation of the type you've conducted, this sort of unbridled enthusiasm probably would have continued to prevail and you could have seen this expanding with very limited impact or unknown impact. So you've put a cautionary note in there that this needs to be perfected more, better evaluated before it gets expanded. So this could ultimately lead to better medical care for many, many people.

Manoj Mohanan:

We hope so.

Kelly Brownell:

So thank you for joining me and thanks you for describing this very important work.

Manoj Mohanan:

Thank you for bringing me and having the opportunity to talk. Thank you.

Kelly Brownell:

My guest has been Manoj Mohanan, an assistant professor at the Sanford School of Public Policy at Duke University. If you're enjoying the series of conversations, I hope you will take a moment and add a review on iTunes. Your review could help other people find this. Thank you. Until next time, I'm Kelly Brownell.