

Responding to COVID-19 in the developing world

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The mass social distancing strategy being used to mitigate the spread of COVID-19 in the United States and Europe doesn't easily translate to a developing country like Bangladesh, which lacks the capacity to impose

restrictions or provide a social safety net for the unemployed. We talked with Yale SOM development economist Mushfiq Mobarak about how he is repurposing his research infrastructure in Bangladesh to gather information and test approaches to spreading public health messages.

Is the social-distancing strategy used in the United States an effective response to COVID-19 in a developing country like Bangladesh?

There are several reasons why the types of strategies that we're seeing in the U.S. or China or South Korea or Singapore are unlikely to be the exact right response for rural areas of Bangladesh.

One key difference is that we don't have much testing going on, especially in rural areas. The testing that is available is limited to a few urban centers, so it's difficult for us to get information on exactly where the disease is emerging and spreading in rural areas. Absent that information, it becomes very difficult for us to figure out how we allocate and direct resources. What are the hotspots? We need to make some indirect inferences on that, and that poses some data and statistical challenges.

Second, imposing social distancing and enforcing the policy is very difficult when institutional capacity is limited around the country. Something that China can impose is not possible for us to impose on a large scale in Bangladesh.

What makes it even more complicated is the fact that this isn't a country where you can provide social-distancing guidelines and then pair them with a big stimulus package. You can't say, "This social distancing is going to have economic costs, and so we're going to try to address that by providing support to individuals and small businesses." If you cannot do

that, it's also going to be very difficult for you to ensure that people will abide by those guidelines.

If you're a day-wage laborer in a rural area of a [developing country](#), and you don't have much of a buffer of savings, you may be reliant on your wage earnings in a given day or a given week in order to feed your family. Now, in a country where there's social insurance and you can target social protection to people who are in that situation, maybe you can tide them over for this period of need. But in a country where it's not easy for us to identify people who need that social protection and provide aid to them directly, it's going to be very difficult for us to ensure that they abide by those guidelines. If their family is going hungry that week, they're not going to follow all of your guidelines.

Is another factor the number of people who are working for themselves or for very small businesses compared to a developed country?

Absolutely. A lot of the economy is in the informal sector, which means that workers are not part of the tax and benefits system. That means that it's going to be harder for you to identify people who have needs and target support to them. Self-employment is much more common in rural areas of developing countries.

You mentioned that there's not very much testing in Bangladesh. Do you have any sense of the extent of the spread of the disease?

In the absence of testing, it's difficult to get that information. Nobody really knows. I'll use this as an opportunity to talk about how one could use data to make an inference about this. Bangladesh has strong

migration links to other countries where we know the coronavirus has been widely prevalent. Many Bangladeshis work abroad, and Italy is one popular destination. So you can imagine that when the Bangladeshi migrants in Italy return home, some of them may have brought the disease back. We don't know for sure if they have, because of course people who carry the virus can pass it on while they're asymptomatic. Looking at those migration links and districts that migrants come from might be one way for us to make inferences about the specific locations within Bangladesh where the disease is likely to emerge and spread.

That opportunity exists not just in Bangladesh, but for many other poor countries. In the absence of direct testing data, we might want to look into each country's exposure to the global coronavirus shock, in terms of how strongly it is linked to certain migration destinations where the coronavirus is known to have spread. How closely is your country linked to Korea or China, Italy or Spain or the United States? Are there a lot of returnees from China in the early period, or Spain in later periods? Then you'd need to figure out what specific regions of the country those returnees are moving back to. That might give us information about this one important vector by which the virus might spread and allow us to indirectly infer the places that we need to direct more resources to.

How did you think about what strategy could work in Bangladesh given these constraints?

It's important to acknowledge, before I talk about the strategies that we are devising and deploying, that we are all flying blind here. This is an immensely complicated problem. It is complicated by the fact that we don't have testing. It's also the case that the economic concerns there are more acute, so the strategic questions at the country level are also more complex.

For example, estimates from economists suggest that it's absolutely imperative for us to just get the virus under control in the U.S. It's not even sensible or necessary to think about [economic costs](#) of social distancing because the cost in terms of lives lost in the U.S. is so large.

In Bangladesh or another poor country, the answer to that basic question is not as clear. We are talking about people who are self-employed: day-wage laborers, people who are living— not even paycheck to paycheck— but hand to mouth. They're dependent on whatever they earn in that particular day or that particular week, depending on the [informal work](#) that they get.

We need to understand what type of costs we are going to impose by stopping economic activity. Is that going to lead to some mortality costs or morbidity costs because people are going hungry?

Another reason why the situation is very complex is that things are rapidly evolving. For example, last week it appeared that the big problem in Bangladesh was that a lot of people, including some of the leadership, weren't taking the crisis seriously enough. There was no testing, so people assumed that we didn't have much of a problem. But this week it appears that the problem has been in some ways the opposite. Many people are over-reacting. A hysteria has been created based on misinformation, and there is now a huge stigma associated with possibly having coronavirus-related symptoms. In the absence of personal protective equipment, doctors are hesitant to see [coronavirus](#) patients. They are less willing to see patients who might need help when it's unknown whether they have COVID or not.

That hysteria and misinformation themselves creates other challenges, because if such a strong stigma gets created, people are going to react by hiding information. If they hide information, then it gets much more difficult for us to tackle the problem. If people are hiding information

and hiding symptoms from their neighbors, they're much more likely to also pass it on to others.

So first I want to acknowledge that there's just a lot of uncertainty here. Given that uncertainty, I can tell you about the various strategies we're pursuing, acknowledging the fact that we don't know whether or not any of this is going to work.

In the absence of testing data, especially in rural areas, I realized that we need to get some information on where the disease is emerging and where it's spreading. I'm taking advantage of the fact that we've been collecting data all over rural Bangladesh for the past few years for other purposes. We have access to phone numbers for thousands of individuals, and we know what type of statistical adjustments we would need to make in order to make those samples representative of some larger populations and geographic areas.

The pre-existing research infrastructure we have in Bangladesh via Innovations for Poverty Action is helpful. We have the enumerators who are trained in this type of surveying, asking people public health and economic questions. And we have some idle capacity right now because we stopped all in-person data collection in line with social-distancing recommendations.

Taking advantage of all of that, we've started data collection in rural Nepal and all over rural Bangladesh. We started the training and piloting required for quality assurance, and we're gearing up to do more than a thousand 30-minute phone calls per day starting April 8.

For those surveys, I sought input from the Yale Global Health Initiative, public health faculty here at Yale, and networks of medical professionals and Bangladeshi-origin doctors. We're asking about symptoms that positively predict COVID and symptoms that negatively predict COVID,

in order to see if we can make some indirect inferences on the likelihood of disease prevalence in certain areas.

We also need to know about people's knowledge about the disease: how they're reacting, how their social behaviors have changed, whether they're practicing distancing, the stigma, what their beliefs are, etc.

Separate from the public health and medical questions, we're also collecting information on local food prices and food security. We want to track whether or not there are food shortages emerging in certain parts of the country, because that's another possible dimension of the crisis. And finally we want to ask people questions about the presence of migrants in their community, and who has recently returned, so that we can start tracking where the disease might be spreading.

We are also coordinating with the governments' efforts and existing data, so that the activities are not uncoordinated.

Once we make phone calls to ask people questions, we can also start delivering simple informational interventions during some of the phone calls. The government and the cell phone companies are sending out generic messaging that can be widely broadcasted quickly. We don't want to replicate that strategy because the government is of course in a much better position to do that. However, we can supplement the government's strategy with other communication that is likely to be useful.

We know from existing research that some person-to-person social influence is a good complement to generic messaging. Often you're much more likely to change your behavior if you hear an appeal from your friend or neighbor that you trust, rather than a generic message coming from an anonymous source. In our [phone calls](#) we are choosing certain individuals to pass on good information to, and countering

misinformation. Then we're giving them rewards like phone credit in exchange for taking on the responsibility to teach these messages to others.

It's possible for us to very quickly evaluate, on a week-by-week basis, whether certain variations in those messages are working better than others. For example, is it useful for us to incentivize people with phone credit or does it actually undermine their intrinsic motivation to play that role? Should we be spreading this through men or women or both? Is there some version of the message that is much more salient, that sticks better than others?

We can quickly evaluate what works well by calling other members of the community the following week to figure out whether the message has spread. That's how we validate whether or not the first week's social influence strategy was successful at changing knowledge and behaviors the following week. If we find something that seems to be working, then immediately we need to work with the cell phone companies and with government to let them know, because they may have the capacity to implement the successful strategies at a large scale. This is why the coordination is critical.

In parallel to developing and deploying these interventions, I'm having conversations with the leadership of NGOs with large implementation capacity and key representatives of the government, so that they know what we're doing. If we find something useful, it won't come as a surprise and hopefully we'll have the trust in place for them to consider scaling it up.

All of these social-influence ideas are based on existing research in which we have deployed these types of strategies in other contexts. For example, in order to diffuse agricultural techniques among farmers in Africa, we've used strategies in which we teach some people who are

well-respected within the community, who have lots of social connections, and give them the responsibility to teach others. It's worked well there when we gave those communicators some incentives. We now have to learn whether these insights translate and adapt well to this very different format. We're doing it over the phone instead of in person; we're talking about public health messaging as opposed to agriculture. It remains to be seen how well it works.

All of these things that I just talked about are micro strategies: talking to individuals. There's also the macro level, the community level. In between the cell phone companies' wide broadcasts, and our person-to-person influence, we know from Sierra Leone's experience during the Ebola crisis that messaging by local community leaders was very important to get the word out. We are trying to assemble a database of local community leaders through whom we can pass on good information for their constituents to follow.

What do I mean by community leaders? It could be people in elected office at lower levels; it could be imams at mosques. In villages in far-flung areas, the imams hold the important microphone. The strategy is to convince imams to tell people that they don't need to actually come to the mosque; during this period they should just stay at home and pray. If you can convince them of that and then persuade them to give that message to other people, that might be a very useful way to prevent the spread of the disease.

Now, that actually turns out to be a huge undertaking because there is no existing database of all the imams around the country. Currently dozens of people on our team are constructing a database of phone numbers of all the local community leaders all over the country. Then we can start making calls, tailoring the message to appeal to people's religious sensibility or other sensibility depending on their leadership position.

Implementing these strategies requires a lot of people to quickly put in effort. I'm from Bangladesh and have been connected to various networks. That allowed me to connect very quickly various organizations whose members have relevant skills, like groups of medical doctors, groups of young professionals who want to work on social problems, groups of Ph.D. economists, computer science students, etc. We've now formed teams drawing on members from pre-existing organizations.

I've been talking about various intervention-based strategies, but there are also analytical questions that need to be answered. How should we be thinking about the economic versus the public health tradeoffs of implementing social distancing? How should we be thinking about a strategy for the ready-made garment sector? Ready-made garments accounts for about 90% of Bangladesh's exports, and their orders have dried up. In fact, the buyers from the U.S. and EU, which are the two big markets, didn't even want to pick up and pay for the existing orders because nobody's shopping for clothing over here right now. How do we evaluate the risk and devise strategies for that particular sector? Should we be trying to figure out how to create a supply chain where these garment factories are repurposed to start producing PPEs and masks? Is that actually feasible? How should we think about addressing the fact that our second-biggest export after garments is human beings? We're quite reliant on remittances that migrants send back home, but that may dry up if migrants are based in COVID-affected countries.

How should we address this really complicated problem of Rohingya refugees? About a million Rohingya people showed up in the last couple of years, and they're tightly packed together in refugee camps. Once the disease reaches those camps, it might spread quickly. The refugees have already faced various forms of trauma, so their immune systems are probably already compromised.

As you learn about the prevalence of the disease from

your phone calls, does that change the strategy of what you say because it changes the balance between the health impact and the economic impact?

Yes. It's not only one phone call that's required; we plan to do multiple calls. Once we have the infrastructure set up, the goal is to call the same people in the same place, to see how the situation is changing over time. That's going to help us learn something about how it is evolving, and it changes our thinking about how stringently we need to impose social distancing. Do we need to deploy more resources in order to enforce the guidelines that the government sent out? But it's hard to even think one week ahead. We're scrambling to react to what happened the day before yesterday.

Provided by Yale University

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