

COVID-19 PREPAREDNESS

Bangladesh must enact widespread surveillance and social distancing measures

AYESHA MAHMUD and CAROLINE BUCKEE

THE ongoing spread of the coronavirus disease 2019 (COVID-19) that originated in Wuhan, China, has caused more than 400,000 confirmed cases and more than 19,000 deaths across 172 countries. The disease has death rates as high as 10-27 percent in people over 85, and 3-11 percent among people aged 65-84 years. In Bangladesh, there have been 44 officially confirmed cases of COVID-19 as of March 26, but the true burden of the disease is likely to be significantly higher. So far, only a few hundred tests have been reportedly administered in the country. Without widespread testing, the true burden of the disease and the extent of community transmission cannot be determined.

With the sharp increase in cases globally, there have been urgent calls in many countries for travel bans and "social distancing" practices. In Bangladesh, all educational institutions, and private and public offices have been temporarily closed in an attempt to halt the outbreak. Travelers from abroad have been asked to self-quarantine, and all domestic flights and public transportation have been suspended. Despite these measures, considerable volumes of travel are occurring daily within Dhaka, and from Dhaka to the rest of the country, with a spike in travel following the announcement of the lockdown.

The virus that causes Covid-19 is spread by close contact. Experiences in South Korea, Singapore, and Hong Kong have shown that widespread testing coupled with strong social distancing measures that limit close contacts, such as school closures and banning of public gatherings, can be effective in controlling the spread of the virus. Indeed, these are some of the few interventions available to us to slow the exponential increase of new cases by reducing transmission, if these are deployed early. During the 1918 influenza pandemic, for example, cities that intervened early had significantly lower death rates.

Social distancing measures are particularly important in the context of large urban hubs and megacities. Dhaka is one of the densest and fastest growing cities in the world, with



Staff at the Dhaka Medical College Hospital stretcher an elderly patient to an ambulance, on March 22, 2020.

PHOTO: ANISUR RAHMAN

more than 18 million inhabitants in the greater Dhaka area. It serves as a central hub with high connectivity to the rest of the country and internationally. Understanding what areas within Dhaka city might serve as transmission hotspots and how to implement strong social distancing measures is, thus, critical.

Population movement and aggregation have been shown to be important drivers of epidemics. However, day-to-day population movement patterns are difficult to measure using traditional sources of population data. Anonymised mobile phone call detail records

(CDR) provide a unique opportunity to estimate population dynamics in real time at a high spatial and temporal resolution. We analysed population movement from anonymised mobile phone data, from Telenor Group's mobile operator Grameenphone in Bangladesh, for about 60 percent of the population in Dhaka city to identify potential "hotspots" for disease transmission. This builds on our previous work with Grameenphone and the National Malaria Elimination Programme, where we used mobility estimates derived from CDR data to

map the spread of malaria (eLife, 2019).

Our analysis shows that in certain areas of Dhaka city, the average daily number of people traveling into that location can exceed 30,000. These include Gulshan, Uttara, Shahbag, Motijheel and Paltan areas. When we consider density, places such as Motijheel are particularly important given the larger volumes of traffic into a relatively small area. When we analysed the travel network in Dhaka, we found that certain parts of the city, such as Dhanmondi, Gulshan, Motijheel and New Market, were more highly connected to other

locations and have large volumes of incoming traffic from all across Dhaka city. Again, the high connectivity of these locations suggests that they could serve as potential transmission hotspots. During the 2017 Chikungunya outbreak, we found in our research (bioRxiv, 2019) that these areas did in fact have relatively higher disease incidence.

Our analysis also shows that large volumes of daily travel occur between Dhaka and all other regions in the country, particularly on weekends. We estimate that, on average, almost 400,000 people travel daily to other parts of the country. This suggests that an outbreak originating in Dhaka is likely to spread rapidly to all other parts of the country. The rush of people leaving Dhaka following the announcement of the lockdown is, thus, especially concerning, and the disease is likely to spread across Bangladesh. Again, without immediate widespread surveillance, it will be difficult to estimate the spatial spread of Covid-19 in Bangladesh.

The time to act is now. We can confidently say, from the experiences of other countries, that acting decisively and quickly is the best way to prevent the health system from being overwhelmed. Bangladesh health authorities should immediately expand their surveillance capacity so they know the extent of transmission of the virus, and they should enact social distancing measures, such as banning large gatherings, reducing unnecessary travel, and staying at home as much as possible—all of which have been shown to be effective in slowing the epidemic in other countries.

Reducing travel overall and especially within high-density, highly-connected locations around Dhaka and the related shutdowns will be critical for slowing the spread of the epidemic. If the infection is allowed to spread unchecked, the health system of Bangladesh is likely to be overwhelmed with severe cases needing hospitalisation, as we have seen in Wuhan, China, and across Italy, with devastating social and economic impacts.

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The universe is shutting us down. Can we restart?

NO STRINGS ATTACHED



AASHA MEHREEN AMIN

AFTER washing my hands for the eleventh time today, I am still not completely sure whether I touched something contaminated—the metal tap, the metal doorknob, the metal part of my pen. I am obsessed with

anything with metal that could host the deadly virus for up to two to three days. It could be a futile exercise, I know. Every object I touch, metal or not, every part of me, could be an unsuspecting host, a blind abettor to an unintentional death... my own, or a loved one's, or someone else's loved one's.

So far, all I know is that the best way to protect myself, those I care about, and those who live with me in this planet is through complete isolation. Unfortunately, complete isolation is just not possible at this point. Being in a newspaper, I fall under the "essential services" list, which requires us to keep the show going. We are trying out ways to minimise office attendance or hours, we practice social distancing in the cafeteria—one person per table only—we wash, sanitise and wash again. But the uneasiness doesn't wash off because the predator is a sly, invisible killer that has left the entire world shaking in fear and reeling from its long-drawn-out aftershocks. It has already taken well over 21,000 lives and counting.

As I indulge in my morbid ruminations and fight back tears thinking of those little, mundane moments that I took for granted but are now the most precious, with family, friends, relatives, colleagues, and acquaintances, I am forced to snap out of it by the realities around me. While I wallow in

self-pity, for thousands of my fellow human beings here and everywhere, self-isolation is not an option, and if imposed, it will mean starvation for the whole family. While I despair that the shops have run out of hand sanitiser and Dettol, many of my compatriots have not had running water for days. Talk to them about washing hands with soap for 20 seconds!

I think of those people and wonder, if I in my privileged bubble am feeling so helpless, what are they feeling? Do they even stand a chance at fighting off this insidious assassin?

Going by the trends of infection and deaths in First World countries, it feels there is a deathly calm here before a merciless storm is about to unfold. I pray I am wrong. My head is overloaded with information—from all the videos, news, views and comments that everyone is sharing on various social media platforms. The phone and internet have literally become the primary connections to other human beings. The irony of it kills me: we are being deprived of the very thing we crave the most: human touch. A video of an official in a foreign country warns of the dangers of a child hugging a grandparent—it could be sure death for the latter if the grandchild is carrying the virus that has chosen to target the elderly with inordinate ferocity (though anyone, regardless of age, can be taken if they have pre-existing conditions). What could be crueler? But this cruelty of separation, this ruthlessness is the only way we can keep people—at least many of them—alive. Isolation, loneliness, distancing from all those you love are the only options left.

Some say it is nature's revenge on us for our relentless onslaught on the planet. Only a few days ago, I read about 16,000 acres of forest in Mymensingh in danger of being cleared because of a "mistake" by the land ministry. Yes, we are as callous as that. Is it

revenge or the only way for the planet to heal itself? While the humans are being forced to get into cages (as someone aptly put it) or doomed to die on hospital beds or without any medical attention whatsoever, there are signs of the Earth trying to breathe again. The air is cleaner without the fumes of vehicles, with no dust from the endless, mindless construction. The skies are bluer with far less of our carbon footprints from frenetic air travel. Dolphins are coming back to their habitat while wondrous wild birds are returning to their favourite spots. I imagine the joy of all creatures in the Sundarbans and other forests of the world, in the rivers, lakes

and oceans at reclaiming what is rightfully their own—their home—from the human encroachers, who have only taken and taken, with nothing to give back except destruction.

Meanwhile, for us humans, the world has come to a standstill. It is as the latest Economist's cover has aptly represented through a globe with the ominous sign: CLOSED. The wheels of unprecedented economic growth, waves of development, billions of dollars of trading—all have come to a halt. All that greed that has led to such decimation of the Earth, all that hunger for power at the cost of grotesque inequality among us, and vulgar consumption of natural

resources, have come to naught. We never listened to the scientists who gave us the bare facts: that the world is getting hotter and more vulnerable day by day. We still didn't listen when a child named Greta crossed the Atlantic to chastise us and warn us of the dangerous predicament we have put the world in and that we must stop everything and try to save our planet. We went on blindly cutting down trees, filling up the rivers and choking the ocean with our plastics, playing havoc with ecosystems and killing our non-human inhabitants in the process.

And while we were consumed with our consumerism and unbridled appetite for more of this and more of that, always more, never enough, while we played that futile game of thrones, the superbugs and superviruses evolved and mutated and waited for their prey.

Never has the world—the world of humans—been left so shattered and defenceless as now. As scientists work round the clock to know this latest and deadliest enemy better, as health workers risk their lives, many with inadequate protection, to save others, and a few good people do their bit to help, what lessons can we draw from this global catastrophe?

Will we give up our selfishness and come together as a community of humans, of nations, and acknowledge our need to share and give and accept each other? Or are we, with greater zeal, going to go back to the path of insularity and othering, of being pirates in the guise of saviours and demigods in the shrouds of leaders? Will we ever be able to hold hands again without fear, or are we doomed to retreat into our lonely cages?

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With no seat left vacant, passengers sit huddled together on the floor of a train leaving Dhaka after the announcement of a general holiday amid the coronavirus scare, at the Kamalapur Railway Station, on March 24, 2020.

PHOTO: STAR

QUOTABLE Quote

MAHATMA GANDHI
(1869-1948)

Indian lawyer, politician, social activist, and writer who became the leader of the nationalist movement against the British rule of India.

If you worry about yesterday's failures, then today's successes will be few. The future depends on what we do in the present.

CROSSWORD BY THOMAS JOSEPH

ACROSS

- 1 Brace
- 5 Petty argument
- 9 School event
- 10 Circus worker
- 12 Yens
- 13 Kagan of the Supreme Court
- 14 Straight path
- 16 Fall back
- 17 Timetable abbr.
- 18 Cable with a pulley for riding
- 20 Bank named on a credit card
- 22 Stable diet
- 23 Sends regrets, perhaps
- 25 Former home of the Mets

DOWN

- 1 Kitchen gadgets
- 2 Makes furious
- 3 N. Atl. nation
- 4 Enlarges, say
- 5 Exorbitant
- 6 Bud
- 7 Aviator Earhart
- 8 Lease signer
- 9 City on the Persian Gulf
- 11 Is furious
- 15 Grunge group
- 19 Misplace
- 21 River of Russia
- 24 Like some sports shows
- 25 Tibia settings
- 26 Medal recipients
- 27 Come into view
- 29 Hankering
- 30 Sought
- 31 Lend - (hear out)
- 33 Polo's home
- 37 Clark's co-worker
- 39 Upper limit

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YESTERDAY'S ANSWERS

C	A	R	E	L	A	S	T		
A	C	U	T	E	L	A	C	T	E
M	A	N	E	D	S	H	I	N	E
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BEETLE BAILEY by Mort Walker

BABY BLUES by Kirkman & Scott