Underlying vulnerabilities and inequalities compromise COVID-19 response - Perspectives on India and beyond

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Abstract:

The WHO recommends ‘testing, tracking and isolation’ of COVID-19 cases as the ‘backbone’ of pandemic response; these seemingly simple recommendations can be daunting for many countries in the Global South. In this commentary based on data from India, we dissect and exemplify some of the underlying vulnerabilities of the countries in the Global South that may impede effective implementation of WHO guidelines from the standpoint of vulnerability assessment and risk management. In the midst of urgent decision-making underlying vulnerabilities can be overlooked, as technical and logistical aspects take precedence. However, differentials in vulnerability can not only modulate the outbreak impact, but also the capacity and effectiveness of the response. Countries need to design their response with due consideration of existing capacity gaps and vulnerabilities to ensure a sustainable response that can avert knee-jerk reactions and minimize likely cascading effects.

Keywords: COVID-19, inequality, vulnerability, disaster, India

Highlights:

- Seemingly simple recommendations of ‘testing, tracking and isolation’ of COVID-19 cases can be daunting for many countries in the Global South, including India
- Underlying vulnerabilities and inequalities can compromise COVID-19 response
- Due consideration should be given to existing capacity gaps and vulnerabilities to ensure a sustainable response that can avert knee-jerk reactions and minimize likely cascading effects

In response to the ongoing COVID-19 pandemic, India imposed a nationwide lockdown on 25 March 2020, which was consecutively extended till the end of May 2020. It has now adapted a cluster approach that aims to contain infections in spatial pockets while easing restrictions elsewhere. While the lockdown initially reduced the spread of infection, from early May 2020 it has accelerated and cases have proliferated across India, to the point of it becoming the 7th most infected country worldwide (1).

The WHO recommends ‘testing, tracking and isolation’ of COVID-19 cases as the ‘backbone’ of response to the Pandemic (2). These seemingly simple recommendations can be daunting for many countries in the Global South. Though the immediate testing capacity for COVID-19 depends upon having a specific testing apparatus, the underlying socio-economic vulnerabilities including an underdeveloped health infrastructure can diminish its effectiveness as a tool to combat COVID-19. Similarly, effective tracking and isolation can be hindered by spatially-explicit socio-economic inequalities, lack of basic infrastructure in different regions and stretched out social protection systems that excludes, among others, millions of informal workers, to name a few.

Testing - health infrastructure and access to it

To efficiently use its limited testing capacity, India shifted from mass testing to focused strategic testing (3). While the COVID-19 testing capacities can only be ramped up gradually due to capacity and supply constraints, India’s overburdened public healthcare has been falling behind for decades. The poor and deprived of the population often lack adequate access to ‘decent’ public healthcare (4). India has relatively poor health infrastructure and ranks lower on certain parameters than its neighbors (5). In India, close to 70% of health spending is out of pocket and approximately only 1.4% of its GDP is allocated to healthcare which is significantly lower than the global average 6% (6). The spatial disparities between states complicates this further. As figure 1 shows, several northern states lag behind other parts of India in terms of per capita health expenditure by the government, number of beds in public hospitals and the availability of health professionals. One study found the hospital bed occupancy on average in South India to be around 75% (7). This if applied to the entire country indicates that at the most 25% of hospital beds capacity is

likely to be available for catering to any sudden events such as COVID-19; this translates into roughly 200,000 hospital beds for the entire country (8), and it is likely that in the densely populated states with preexisting poor health infrastructure (figure 1 & 2), capacity to deal with COVID-19 is further limited. While the regional differences in dealing with the situation due to varying capacities and infection rates is likely, any exponential increase in infections can eventually overwhelm the entire nation unless the capacity is rapidly augmented and infection spread is kept in check.

More than half of India's population is vulnerable to health emergencies due to inadequate access to healthcare facilities and social and economic deprivations (9). Most of the Indian households depend upon personal savings to weather shocks – health or otherwise (10). Though gross savings (31% of GDP) is higher in India than the world average (25.41%), the adjusted net per capita income of US\$ 1,678 for India is significantly lower than the world average of US\$ 8,826 (11, 12). This indicates a relatively lower level of affordability and disposal income in India to meet any emergency need or for availing the expensive private healthcare system. This is further compounded by the fact that states with lower per capita income are often the states with relatively poorer public health infrastructure as well. This means that the people who have lesser disposable income to weather the burden of any planned or sudden expense such as the pandemic also likely to lack access to quality healthcare.

Figure 1: Health and Income related indicators across Indian states*

*Maps are for representational purposes only, territorial accuracy is not claimed. States delineated post 2011 are shown as part of their erstwhile states as sufficient separate data is not available. Lakshadweep is not shown in figure a) and d) and A & N Islands are not shown in d) due to missing data. Map a) Per Capita Income is at constant price (2010-11) converted in US\$ (1 US\$ = INR 75). Map b) Per Capita Health Expenditure is at constant price (2015-16)

converted in US\$ (1 US\$ = INR 75). Maps are based on data publicly available on the *NITI Aayog* Website (<https://sdgindiaindex.niti.gov.in/#/ranking> accessed on 26 May 2020).

Only about 10% of Indians have any sort of health insurance, the rest solely rely on personal finances and social networks (13). Overall, the public healthcare system only caters to the 30% of the Indian population while the private healthcare system (often more expensive) caters about 65% of the population and the rest of the population is looked after by either charitable trust or the informal sector (9).

Tracking – monitoring in clusters

The federal and state governments in India seem to be very proactive in tracking infected patients. While infection was initially prevalent among the people arriving from abroad and those in contact with them, the gradual spread of infections across India is making tracking an arduous task (14). The Indian government mobilized more than 9 million community health workers and self-help groups to conduct door to door screening, provide ground level monitoring and spread awareness. This screening was also used to identify households needing assistance to mitigate the hardships of the lockdown and register incoming travelers (15). Additionally, the government launched an app named ‘*Aarogya Setu*’ in 9 languages including Hindi and English that automatically informs if the user has ‘crossed paths’ with someone who has tested +ve for COVID-19 and also provides a 20 second self-assessment test. India took a spatial approach to contain the infection, localities with high concentration of infections are delineated as hotspots and areas within 3 kilometer radius of these hotspots are marked together as the ‘containment zones’. This spatial monitoring, if effectively implemented, can hold the key to going back to normalcy where instead of locking down entire cities, smart cluster based monitoring can be efficient and effective in infection containment and reduction, with minimal disruption to the rest of settlement.

Despite these efforts, the tracking of infections remains challenging. As evident from figure 2, Indian states with high population density are often the native place for workers who have migrated across the nation for work. The imposition of the lockdown witnessed a large scale exodus of people (predominantly migrant workers) back to their native places. This lockdown triggered exodus not only threatened people’s economic

wellbeing and health, it contributed to the spread of the virus across India undermining the objective of the lockdown to prevent the spread of COVID-19 (16). Unfortunately, as the figure 1, 2 a) and 2 b) show, these states where the majority of migrant workers are from, are the ones with relatively weaker health care infrastructure, monitoring capacities and more vulnerable communities that have lower affordability. While the number of cases at the moment in such states is relatively low (figure 3), this failure to contain the spread can be especially strenuous for them. This underlines the complexity and cascading effects that measures aimed at stopping community transmission can have.

Figure 2: Population density, migrants and percentage of urban dwellers in slums across Indian states*

*Maps are for representational purposes only, territorial accuracy is not claimed. States delineated post 2011 are shown as part of their erstwhile states as sufficient separate data is not available. Lakshadweep is not shown in figure c) due to missing data. Map b) is based on 2011 Census of India data. Maps c) is based on data publicly available on the *NITI Aayog* Website (<https://sdgindiaindex.niti.gov.in/#/ranking> accessed on 26 May 2020).

Isolation –a privilege that millions don’t have

The government of India identified quarantine and isolation as prime tools for infection containment as it helps in breaking the chain of transmission (17). For people in touch with suspected or confirmed cases, voluntary home isolation is also permissible. Indian government’s guideline for home quarantine recommends the quarantined individuals to “stay in a well-ventilated single-room preferably with an attached/separate toilet. If another family member needs to stay in the same room, it’s advisable to maintain a distance of at least 1 meter between the two” (18). However, for the majority of Indians such requisites remain aspirational, far from the reality. Close to 42% of Indian households have three or more persons per room (19). The extremely dense slums devoid of basic services where people stacked in poorly ventilated units often share toilets with other households, are increasingly emerging as COVID-19 hotspots (20). Comparing figure 1, 2 and 3, it can be stated that while regions with poor health infrastructure and socio-economic vulnerabilities remain susceptible to rapid infections, states with better health infrastructure and lower economic vulnerabilities can be witness spatial pockets of widespread infections especially due to higher percentage of urban dwellers in slums, which in turn can enhance their vulnerability to the Pandemic. The current status of infection (figure 3b and 3d) renders a similar picture.

The prerequisites of an effective home isolation, basic hygiene and quarantine are the privileges that many across the world, particularly those living in the informal settlements do not have (21). At the same time, incidences of patients escaping from the government quarantine centers and isolation wards have been reported from different parts of India (22). Such instances indicate a trust deficit in the public healthcare facilities. The lack of safety nets and hand to mouth subsistence precludes millions from sustaining even a short term lockdown. Experts have also warned that as isolation can adversely impact mental health (23) and increase domestic violence against women. The long term consequences of increased monitoring of population needs to be understood as well.

Has COVID-19 revealed the underlying vulnerabilities and inequalities?

The prevailing vulnerabilities of the nation and its population exacerbate the impacts of COVID-19 and pose a serious challenge to the effectiveness of the ‘testing, tracking and isolation’ paradigm. The physical susceptibility of available infrastructure and material conditions are further compounded by the economic constraints of the vulnerable strata of society. To address these vulnerabilities fundamentally, India needs to further eradicate extreme poverty (22% Indian households live below the poverty line) while protecting the vulnerable population from falling back into it. At the same time, comorbidity (such as diabetes, hypertension etc.) which can enhance the fatality risk from COVID-19 (24) is very prevalent among Indians (25), this among others calls for the adoption of a healthier lifestyle. As figure 1, 2 and 3 show, these vulnerabilities often tend to overlap creating cascading effects. The health care infrastructure and services seem to be failing to address the challenges of rapid population growth, rising inequality and organic urbanization. Though putting 1.3 billion people in lockdown slowed the spread of infection, the underlying vulnerabilities (figure 1 and 2) seems to have compromised India’s response to COVID-19 (figure 3). Without comprehensive long-term planning that addresses fundamental drivers such as inequality, social and environmental justice, demographic change, haphazard urbanization etc., hundreds of millions of Indians can fall back into poverty and these vulnerabilities may in turn make them more susceptible to various hazards (26).

Figure 3: COVID-19 infections and fatalities across Indian states*

*Maps are for representational purposes only, territorial accuracy is not claimed. States delineated post 2011 are shown as part of their erstwhile states. Maps are based on publicly available data accessed on 30 May 2020 from <https://github.com/covid19india/api> that sources data from <https://www.mygov.in/corona-data/covid19-statewise-status/>.

While the Indian government -be it the federal or various state governments- has put commendable efforts and resources in limiting the spread of COVID-19 and mitigating its effects, reducing inherent vulnerabilities is of utmost importance for long term resilience and sustainability. Many factors that enhance India's vulnerability and exposure to climate change and disasters, are also likely to undermine its response to the pandemic. India is one of the most disaster prone countries in the world. In last two weeks of May 2020 alone, while the infection spread has accelerated, India was battered by two cyclones of unprecedented strengths – cyclone *Amphan* hit the eastern part of India where some of states with relatively weaker health care are located and cyclone *Nisarga* hit the state of Maharashtra on its westerns coast, which currently has highest number of COVID-19 infections among Indian states. While these events occur disjointly, the underlying factors that enable nations to reduce their vulnerability and exposure both to environmental disasters and pandemics, often overlap.

We recommend that a comprehensive risk reduction and management planning should encompass stipulated social protection floors, access to affordable quality healthcare and education, employment registration and guarantees, fiscal decentralization and the strengthening of local governance among others. While such actions can only become effective gradually, we hope that the traction gained by the colossal pandemic response efforts may at least initiate a comprehensive understanding and endeavors for disaster management and risk reduction. At the same time, the community remains the first responder in disasters and for many countries of the Global South that have limited capacity and resources to address COVID-19, community support networks need to be strengthened to respond efficiently.

Limitations:

COVID-19 is an unprecedented unfolding disaster, this paper is based on the information available till 30 May 2020.

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