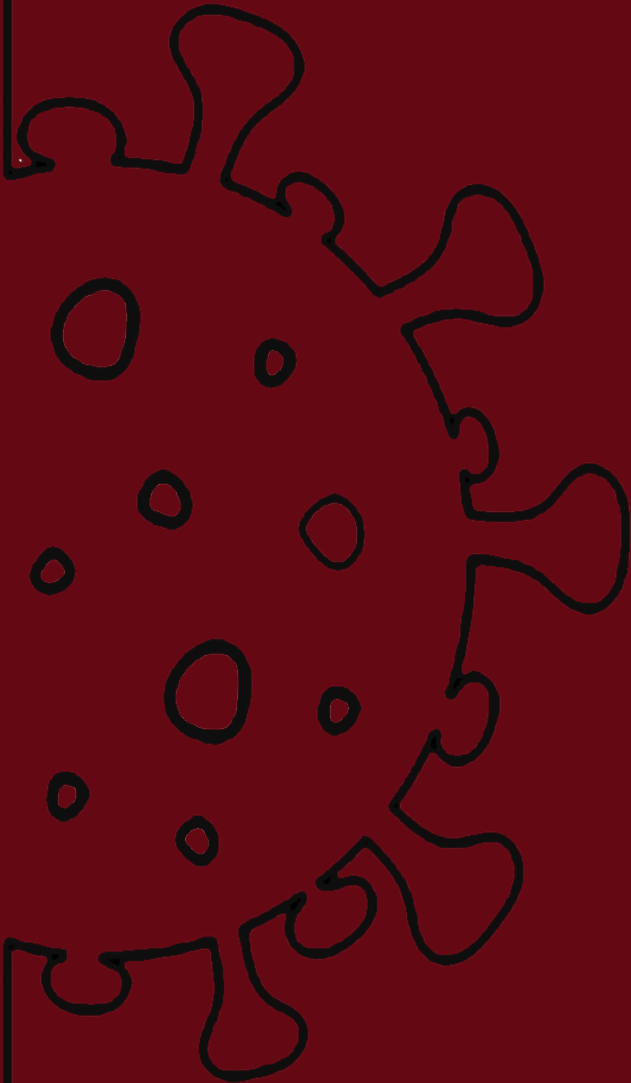


THE *LANCET* COVID-19 COMMISSION
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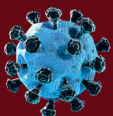
Managing India's Second COVID-19 Wave: Urgent Steps

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The *Lancet* COVID-19 Commission

India Task Force



THE *LANCET*
COVID-19 COMMISSION

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The second wave of the COVID-19 pandemic has hit India hard. The number of new cases has gone up from 11,794 in the first week of February 2021 to 152,565 as of April 10, 2021.¹ The number of new deaths per day has gone up from 116 in the first week of February 2021 to 838 as of April 10, 2021.¹ As of April 1, 2021, 84.61% of all new infections were concentrated in Maharashtra, Chhattisgarh, Karnataka, Kerala, Tamil Nadu, Gujarat, Punjab & Madhya Pradesh.² Test positivity rates (TPRs) rose nationwide from 2.8% in the first week of April 2021 to 10.3% by April 10th 2021 with wide regional variation, peaking in Maharashtra at 25%.^{3,4,5}

The second wave is different from the first wave in September 2020 in two important ways: first, the rate of increase in new cases is significantly higher. The increase from 10,000 to 80,000 new cases per day from February to April has taken less than 40 days. In September, this journey took 83 days.³ Second, many more of the cases testing positive are asymptomatic or mildly symptomatic, resulting in relatively low rates of hospitalization and mortality.^{6,7} It is not entirely clear if the higher proportion of asymptomatic cases are entirely due to better contact tracing (more family members, for example, being tested). The overall Case Fatality Ratio (CFR) since the beginning of pandemic

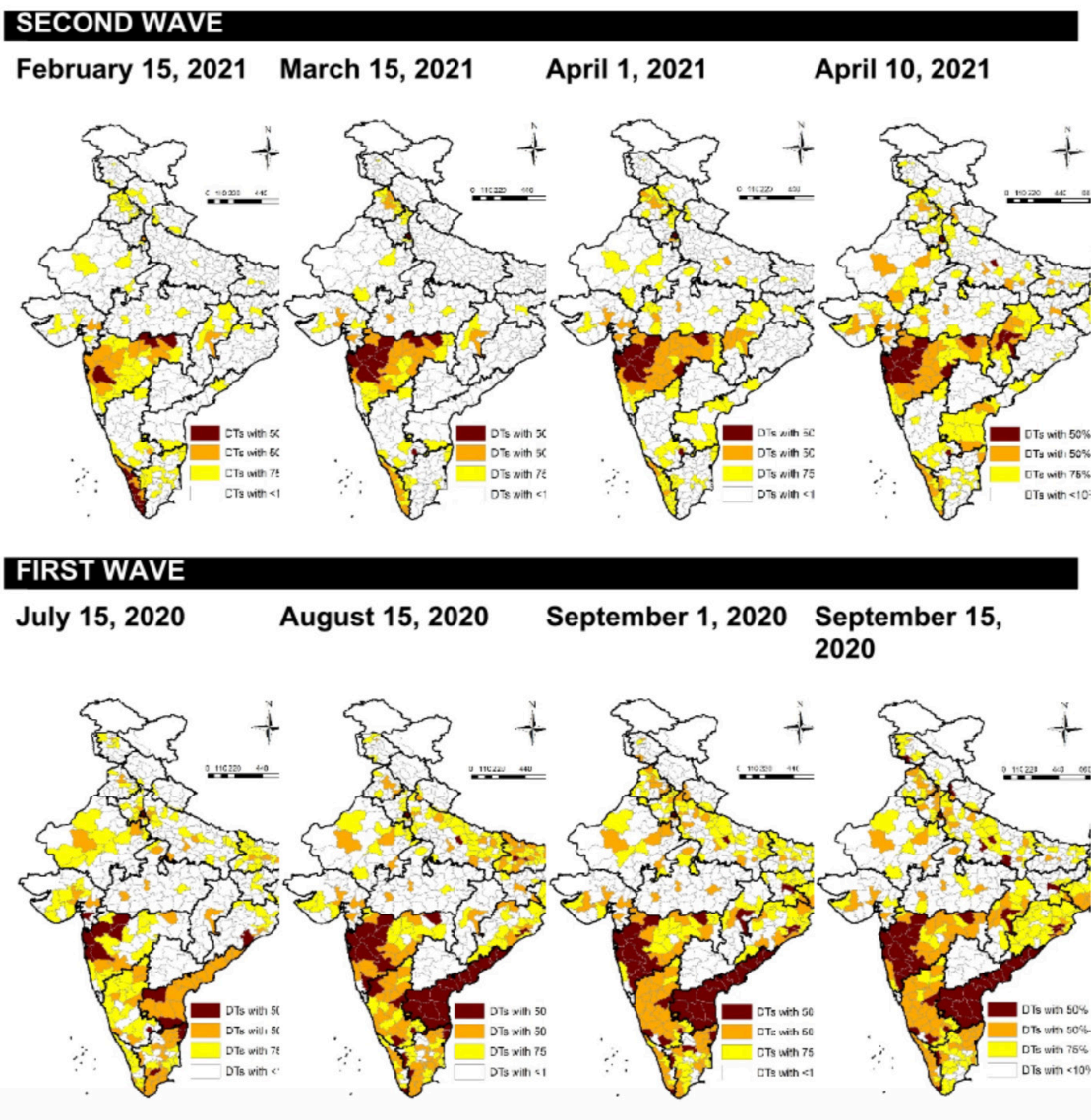


Figure 1: Districts accounting for 50%, 50%-75% and 75%-90% of cases. Note: No district-wise data is available for Telangana. Source: Mukhopadhyay and Roy (forthcoming)

in March 2020 has been reported to be around 1.3% while the CFR among patients who have contracted the virus since the beginning of 2021 is far less at 0.87%.⁸ Provisionally, it appears that CFR appears to be lower in the second wave. Yet, India is reporting 664 deaths per day across the country (7 day moving average a/o April 10th, 2021).¹ Fatality numbers lag infection rates, and are likely to rise as infections surge.

Preliminary analysis indicates that while the pandemic has spread, the geographic contours of the second wave closely mirror those of the first wave, though with a deeper penetration into tier 2, tier 3 cities. Over the past year, there are 215 districts that have been among the top 10% districts in terms of case infections at one point in time. Nine districts (Chennai, Kolkata, Mumbai, Nashik, New Delhi, North 24 Parganas, Pune, Thane, and Solapur) have been part of the top 10% throughout the year. The second wave has been more geographically clustered so far. The number of districts comprising the top 50% has dropped from over 40 at the time of the last peak, to less than 20 currently, indicating a much more concentrated pandemic. In fact during the first surge over August and September, the number of districts for the top 75% of cases was 60-100, while it has been around 20-40 districts during this surge.

To cope with the rising numbers, state governments across the country are striving to ensure the availability of sufficient hospital beds, both ICU and non-ICU for COVID management along with increased capacity in COVID Care Centres (CCCs), across the public and private sector.

It is imperative to break the transmission spread of the disease and reduce the number of new cases. In absence of such efforts, worst case scenarios project that India could lose nearly 1,750 lives to COVID per day, rising to approximately 2,320 per day by the first week of June 2021.¹ Disruptions to regular health services, such as routine immunisation and delivery care, could have devastating consequences for maternal and child survival.⁹ Fiscally, India may need to spend more than \$7.8 billion on testing and \$1.7 billion on healthcare utilisation due to COVID-19 infections leading to death by September 2021.¹⁰

Urgent steps are needed along two trajectories of action- large scale vaccinations to minimize the severity of the disease, and breaking the chain of transmission through safe behaviours. Several of these recommendations are already part of Government advisories and plans. We strongly urge for a focus on the following actions, along with rigorous implementation at the district and local levels.

VACCINATIONS:

An accelerated vaccination drive is key to Government efforts to combat the spread of COVID-19. With the renewed rise in cases, the government's own target is administration of 5 million doses a day, focused on all individuals over the age of 45 years.¹¹ We endorse the target of 5 million daily doses and recommend the following:

1. **Aggressive coverage of priority population groups, followed by phased opening up to younger populations based on supplies:** We urge aggressive ramping up of vaccinations to cover the current priority population (45 years and above). As of April 11, 2021, 29.6% of this population group had received one or both doses of a vaccine.¹² We recommend a specific focus on the urban poor within this age group, especially in states (and districts) with the fastest rates of infection.¹ We recommend addressing access (through community and workplace based camps), and demand (through strong community mobilization) to increase uptake within the population over the months of April and May 2021, with a view to a phased opening to younger populations as supplies permit.
2. **Include all adults, including those below 45, with severe co-morbidities into the priority population group:** Adults with severe co-morbidities (for example, obesity, cancer, cardio-vascular disease, diabetes, renal/kidney failure, pulmonary disease,

¹ Maharashtra, Chhattisgarh, Karnataka, Delhi, Tamil Nadu, Uttar Pradesh, Madhya Pradesh and Gujarat.

and HIV infection) are at particular risk to severe COVID-19 and related hospitalization.¹³ We recommend that the Government identify a list of critical co-morbidities that allow adult patients with serious medical conditions (like tuberculosis) access to the COVID-19 vaccines.

3. **Urgently approve and deploy a broader mix of vaccines:** At this moment India deploys the use of 2 vaccines: Covishield and Covaxin. As of April 13, 2021, the Government of India has given emergency approval for other vaccines that have met safety and efficacy standards and received regulatory approvals in other markets. These include: Janssen (Johnson and Johnson), Novavax, Sputnik V, and mRNA vaccines (Pfizer-BioNTech, Moderna). We applaud this decision for three reasons: first, as a risk mitigation strategy beyond relying on two relatively new vaccines; second, to utilize domestic manufacturing capabilities to enable India to meet its COVAX obligations as well as domestic demand; and third, to focus on vaccines that have been proven safe and effective and are and can be produced locally within the country.^{14,15} We urge that immediate steps are taken to expand the supply of all vaccines available for domestic use in India.
4. **Ramp up manufacturing capacity:** Today Indian manufacturers are producing approximately 70-80 million doses of vaccines per month (Covishield and Covaxin).^{16,17} Even if 100% of this supply was for domestic use, at a target of 5 million doses a day, the monthly supplies would fall short by half. Bharat Biotech aims to increase production to 150 million doses per year, which would reduce the supply gap to some extent.¹⁸ But given India's COVAX commitments, it is critical to ramp up production capacity. Ongoing discussions between vaccine developers (Sputnik V, Johnson & Johnson and Novavax) and Indian manufacturers indicate that over 800 million doses of these vaccines are projected to be manufactured in India annually; however, these are provisional estimates, primarily aimed at exports.^{19,20} Domestic availability of these vaccines will depend on Indian regulatory clearances, and
5. **Address vaccine hesitancy:** Despite the high rates of vaccinations, surveys show that even though acceptance is increasing, only 57% respondents said they are now ready to take the shot (compared to 33% who said this in January).^{21,22} As in the case of all inoculation campaigns, a massive public outreach effort is needed to address vaccine hesitancy. This will include transparent and clear information on the safety and risks of vaccines and a focused message on the importance of the COVID-19 vaccine *in preventing severe illness*. Helplines and counsellors need to be in place to address any fears or doubts around the vaccines. A concerted advocacy campaign spearheaded by religious leaders, community elders, and public figures needs to be launched to build a consistent message around the urgency of vaccinations, including a targeted audience-specific behaviour change communication strategy.
6. **Monitor, collate, and transparently report on Adverse Events Following Inoculation (AEFIs):** Given the new, expanded pool of vaccines being made available within India, and given the global AEFI related concerns with specific vaccines such as Covishield and Janssen, we strongly urge the government to update AEFI guidelines to report regularly on a) the frequency of AEFIs related to each vaccine; and b) the severity and nature of AEFIs. We also urge appropriate training of healthcare workers to recognize and treat AEFIs from vaccines, and to update vaccine related advisories based on the incidence of AEFIs associated with specific vaccines for the Indian population. Finally, we recommend that the 30-40 minutes observation time be used for basic health screening (checks for hypertension and diabetes, for example) which can inform links between comorbidities and AEFIs.

NONPHARMACEUTICAL INTERVENTIONS (NPIS):

A renewed focus on implementation of NPIS is essential if the current surge is to be brought under control. We recognize that 'pandemic fatigue' has set in. A renewed intensive effort is needed to ramp up individual and community actions to limit the spread of COVID-19.

We recommend the following:

7. **Public advocacy campaign on mask wearing and safe behaviour:** The Government of India, led by its political leadership carried out an exemplary campaign at the start of the pandemic, encouraging citizens to wear masks outdoors, buttressed by mandatory fines for non-compliance. Given the relative return to normal economic and social activity one year on, we believe it is time to relaunch a massive public advocacy campaign on mask wearing, this time shifting the message onto the importance of wearing masks *in closed spaces* outside one's own home, along with in the open, as currently advised. This would cover public transportation, office and work spaces, shops, religious sites, and visits to friends and family. A high profile campaign will focus attention on a) the benefits of masks indoors and outdoors in preventing air borne infections, b) the value of double masking in high risk settings such as hospitals or close, confined spaces, c) the importance of air ventilation; and d) the need to wear masks and practise safe behaviour even *after* receiving the vaccination. The susceptibility to infections appears to be particularly high immediately after vaccination (either due to lower immunity or due to unsafe behaviour), and an advocacy campaign on the need to remain vigilant will help mitigate this risk. Other elements of safe behaviours (physical distancing, hand washing) need continual emphasizing as well.
8. **Bans on mass gatherings and venues for large congregations:** Surges in COVID-19 cases worldwide are attributed to "super spreader events" or a few events of large congregations that fuel a spread in infections. Several such potential events are scheduled in parts of India for the months of April and May. These include religious events, political events (state elections), and social gatherings (resurgence of weddings, sporting events). We strongly recommend a temporary *ban on gatherings of groups larger than 10 for the next two months*. We recognize the impact of such events in that past. These experiences should be used to formulate future strategies. Such restrictions will be disruptive, but believe that public health concerns need to override any other considerations, given the risk of infection, morbidity, and mortality. Where such events have already taken place, we urge greater vigilance to monitor for surges in infections, especially in districts to which people will return from such events. Further, we strongly recommend, in districts with increasing infections and load on health facilities, closures of all movie theatres, sports arenas and stadia, and indoor halls where groups of more than 50 can gather, for the months of April and May 2021.
9. **Community led, decentralized tracing, testing, and isolating and community monitoring:** Accurate and immediate testing, tracing and isolating is a cornerstone of effective COVID-19 management. As numbers rise steeply, following up with contact tracing, testing, and isolating becomes a challenge at the national or state level. Tracing the origin of the infection becomes harder, but the community can help forward tracing and isolating of cases. We recommend a renewed focus on supplementing state and national efforts with a *decentralized approach at the community-level to trace, test, and isolate patients*. Over the last year, there are several documented successful examples of locally managed tracing, testing and isolating efforts.^{23,24} These efforts need to be scaled up across the country, especially in the states bearing the brunt of the new infections, border districts to high case load states, and home states for migrants from high caseload states. District level teams to identify and trace contacts, test, and isolate COVID-19 patients already exist; we recommend they are strengthened and supported by the state and national Task Forces; with the flexibility to exercise discretion on how

best to involve local communities in ensuring support to COVID patients without stigmatization or laxity. Community Care Centers already exists in several cities; we recommend that such centers be deployed and scaled up for isolating COVID-19 patients in population dense areas.

10. Scaling up RT-PCR testing, with data on vaccinations: Reliable, timely testing is a critical element of an effective strategy to combat the spread of COVID-19. We recommend that all states ramp up facilities to conduct RT-PCR tests, including both naso-oropharyngeal saliva and nasopharyngeal (nasal swab) tests. *We recommend that the COVID-19 test registration form be immediately amended to include information on whether the individual getting tested has received one or both doses of the vaccine (with details of the type of vaccine).* This information can help track the spread of post vaccination infections, and the spread of potential variants. Given the high proportion of asymptomatic cases, RT-PCR tests should be prioritized over Rapid Antigen Tests for a more precise and accurate approach to identifying and isolating asymptomatic cases.²⁵ The supply of RT-PCR tests should be expanded, and tests made available across a series of price points to relieve demand. In addition, we recommend testing sites be set up at all points of transit (airports, train and bus stations). In areas of high incidence and mobile populations, Rapid Antigen Tests can avoid delays; however all symptomatic negatives from these tests should undergo RT-PCR tests immediately.

TRAVEL AND MOBILITY:

- 11. International travel:** We recommend a mandatory 7-day institutional quarantine for all visitors arriving from other countries, with an RT-PCR test conducted on day 8, and the option of completing another week in home isolation if the test is negative. Local communities can be mobilized to ensure the effectiveness of home quarantines.
- 12. Domestic travel:** We recommend no restrictions on domestic travel, either within or between cities. Advisories should be issued to promote

safe behaviours, and testing made available at source and destination sites. Individual states will need to determine their own protocols based on caseloads and local circumstances. We recognize that seasonal migration of workers from urban areas to rural areas is about to commence with the start of the harvest season. We recommend that state governments make a special effort to support migrant labour in these journeys, equipping them with masks, options for testing and vaccination where eligible, and by setting up quarantine centres in host districts to manage the spread of the virus from cities to rural areas.

SCHOOLS AND COLLEGES:

- 13. Schools and colleges:** We strongly recommend that teachers and school staff are vaccinated on a priority basis. We recognize that in states with high rates of infections, it will not be possible to open schools immediately, especially in the context of clusters of infections in and around hostels. However, we believe that the next two months can be used to prepare the education sector for a safe opening in July 2021 for the next academic year. The Task Force has issued a separate set of recommendations for safe reopening of schools (available [here](#)); we strongly urge governments to consider the significant and potentially catastrophic losses in learning, especially for children from low-income families, that have already occurred due to extensive school closures, and to limit such instances as much as possible.

GENOME SEQUENCING:

- 14.** There are several theories, but few definitive explanations for the new surge of infections in India. We urge a focused effort to identify the root causes of the surge, including an expansion of genome sequencing of the coronavirus to understand if mutants or variants are responsible for the current surge, and if so, the nature and type of such variants. This will require a much broader effort at genome sequencing. We recognize the Government of India effort to launch the Indian SARS-COV-2 Genomics Consortium (INSACOG), led by the National Centre for Disease Control (NCDC)

in December 2020. We urge the government to support INSACOG to achieve its goal of testing 5% of all cases every month on a continuous basis, through financial and regulatory support. Note that New York City alone samples up to 1,500 sequenced cases each week.²⁶ In the short-term, labs should be equipped with TaqPath test kits to urgently identify the B.1.1.7 variant across states.

STRENGTHENING OF THE HEALTH SYSTEM:

15. The health system in India has been under tremendous strain for the past year, and is likely to continue to stretch to deliver the care needed for rising COVID-19 cases, as well as the backlog of non-COVID medical cases. In addition, health workers are responsible for the scaled up vaccination drives, leading to enormous pressure on their time and capacity. We urge the government to take the following steps urgently: a) address bottlenecks in the pharmaceutical supply chain to end shortages of essential drugs (steroids) and equipment; b) invest in medical facilities infrastructure including enhanced ability to transport patients, and overall preparedness especially in tier 2 and 3 cities to cope with high levels of hospitalization; c) initiate refresher training programs and support for health care workers to equip them to handle COVID cases (including optimal deployment through task shifting); d) strengthen ongoing programs to support the mental, emotional, and physical needs of health care workers, through access to resources, counselling, and care as needed. In areas with a surge of COVID-19 cases, we recommend temporary postponement of elective surgeries, and restricted OPD hours. In all cases we recommend strengthening of virtual health consultations, and management of mild COVID cases remotely (through home based care).

ECONOMIC ACTIVITY:

16. Finally, we do not recommend a blanket national or state lockdown, as opposed to localized, phased restrictions or closures. The experience of the past year has shown us that economic closures are

most disruptive to the poorest sections of society. In urban areas, daily wage earners, informal sector workers, and low-skill workers are the most likely to be impoverished from disruptions in economic activities. Yet, experience from other countries has shown that lockdowns do assist in bringing down transmission rates.^{27,28,29} A middle ground approach will be needed in India. We recommend that in areas of high infection rates, the focus is on breaking the chain of transmission through local actions. We recommend that advisories be issued that strongly encourage anyone that can to remain at home (white collar workers, for example, who can work from home) to do so. We also recommend that venues that host large congregations should be closed, as described above, and activities that encourage large gatherings should be banned. But restrictions on the movement, or work of the working urban and rural poor should be minimized and locally determined through the *creation of micro-containment zones in high case-load areas*. Decisions on local lockdowns or curfews are best left to local authorities, and must be based on localised trends in epidemiological data (transmission, test positivity rates, hospitalization, and mortality rates). These decisions should be made after in-depth consultations with local businesses, community leaders, and workers associations. More importantly, extra care needs to be taken in terms of testing and vaccinations to ensure that workers are protected and safe during this current phase of the pandemic.

India is at a critical stage in the COVID-19 pandemic. In the first instance, all efforts need to be made to break the transmission chain and reduce the rate of new infections, with minimum disruption to the economy and to the livelihood of its people. Simultaneously, accelerated vaccinations will help contain the pandemic in the medium run. The past year has shown us, both within India and in other countries, that strong political will, together with building preparedness in the health system, and individual and community behaviour change can yield powerful results. We hope that strong, decisive actions taken now will spare India a long second wave and set in place actions to prevent further waves of COVID-19 infections.

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