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THE URGENT NEED FOR A MOBILITY LOCKDOWN

The next few weeks are going to be crucial for India. Smart restrictions on movement can slow down the virus.

Chinmay Tumble
feedback@livemint.com
AHMEDABAD

The brutal second wave of the covid-19 pandemic has caught India off guard. Policymakers are gasping for solutions and while vaccination is imperative in the medium- to long-term, over the next two months, the critical strategy to tame this second wave lies in effective containment.

Last year, in late-March 2020, the central government of India went in for a nationwide lockdown that bought time to scale up health infrastructure, but that strategy had an outsized impact on the economy and also led to a full-blown migration crisis. Scarred by that episode, this year, the central government has indicated its reluctance to impose a nationwide lockdown.

As a result, state governments are imposing their own restrictions, mostly avoiding the word “lockdown” in their public communication. These restrictions are aimed at reducing mobility and keeping people at home for as long as possible in order to slow down the transmission of the virus.

But can we measure the effectiveness of these restrictions in curtailing the actual levels of mobility? Are they effective in bringing down the growth rate of covid-19 cases? Finally, is it possible to identify regions that require more containment measures?

The answer to all of these questions is a suggestive “Yes”.

While the second wave is showing early signs of moderation, the accuracy of this data is somewhat questionable, especially at a time when the testing and public health capacity is stretched to the limit. What is less questionable is the mobility scores, which, one can argue based on the evidence presented below, is an important high-frequency indicator that could be used in the days ahead to impose or remove restrictions.

The mobility metric also allows us to look back and answer several crucial questions, such as, whether elections had an impact.

REDUCING MOBILITY

One of the stylized observations during the course of a pandemic is that human beings tend to reduce mobility—either because it is mandated by the government or because people are too scared to venture outside their homes. Even without a state-mandated lockdown, it is possible to have a situation in a raging pandemic where mobility is drastically curtailed.

Cross-country evidence from last year shows a robust negative correlation between covid-19 caseload and mobility (Sulyok and Walker 2020, for instance, published in the journal *Epidemiology and Infection*).

The metric used for mobility comes from the Google Community Mobility reports, published by Google after the outbreak of the pandemic last year in order to aid public health policies. Using its location tags, Google computes for a particular geographic region, a figure expressed as a percentage change in visitors to particular sites with respect to the baseline level in Jan-Feb 2020. The reports do not capture inter-state migration but does capture intra-city or intra-district mobility instead.

The category ‘Retail & Recreation’ which covers restaurants, shopping centres, cafes, museums, theatres, and libraries shows the least day-to-day variation across different categories and, accordingly, this is a valuable metric to outline the district-level situation in India.

When the nationwide lockdown was announced on 24 March 2020, within a week, over 80% of the districts in India registered a mobility score of less than negative 60%, i.e., a fall in visitors to ‘Retail & Recreation’ sites by 60% or more from the Jan-Feb 2020 baseline.

The few districts that registered a relatively lesser fall were concentrated in eastern Uttar Pradesh and Bihar, suggesting that the lockdown was not enforced as rigidly in those locations as in other places. However, by 1 May 2020, virtually all of India was below the -60% mark. Since then, India gradually unlocked itself and mobility rose across the board, though it was dampened in a few regions which suffered excessively in the first covid-19 wave that eventually peaked in mid-September 2020.



An oxygen supply store in Kolkata. Hopefully, the maddening election frenzy will die down quickly before people start to die in large numbers in the four states that went to the polls.

BLOOMBERG

The covid curve kept falling until February 2021 when it suddenly began rising once again and, conversely, the mobility curve which was rising until then began to taper off.

The February outbreak in Amravati, Maharashtra—perhaps the earliest indication of a coming second wave—resulted in a mini-lockdown in the district taking its mobility scores again to minus 60%. As seen in the maps, on 1 March, most districts in India had regained mobility levels very close to the pre-pandemic levels, except for Amravati and a cluster of districts around it.

By 1 April, as the maps indicate, restrictive measures imposed by the Maharashtra government slowly began to reduce mobility in the state, as also in neighbouring Chhattisgarh, Madhya Pradesh and Gujarat. At the all-India level, the mobility score began to systematically fall only after 6 April and became more synchronized across districts only after 16 April. Even then, by 27 April, as the map shows, large swathes of India had a mobility score well above the negative 40% mark.

An important reason for the slow reduction in all-India overall mobility, even as the second wave gathered momentum in April, was the status of the four election-bound states: Kerala, Tamil Nadu, West Bengal and Assam. Between 1 March and 27 April, districts in these states saw their mobility score fall by 13 units, while other states (even after excluding Maharashtra) saw mobility reductions of nearly 25 units.

These differences are statistically significant. Elections had a clear impact. In all likelihood, the election frenzy overtook the more important public messaging on the seriousness of the widening arc of the second wave of the pandemic.

Other regions apart from the poll-bound states where mobility reduction was slow was in eastern Uttar Pradesh and Bihar, the same places where even the nationwide lockdown of last year took time to reduce mobility.

THE CONTAINMENT

Since the second wave is almost certainly fuelled, in part, by new strains of the virus, it is meaningful to look at the effectiveness of containment measures from just the past few months rather than the past year.

If one looks at Bangladesh, the covid-19

daily caseload curve began to kick off in late-February (similar to India) and appears to have peaked on 9 April 2021. A systematic fall in the Google Mobility score in Bangladesh can be observed from 26 March. After several directives and finally a nationwide lockdown on 5 April, it had reduced its mobility score by 30 points by 9 April.

A similar two-week lag—between the onset of mobility reductions and a noticeable slowing down in infection spread—can be observed for Mumbai too, where a systematic mobility score reduction started from 28 March and the covid-19 daily caseload appears to have peaked around 10 April.

The link between mobility score reduction and covid-19 daily caseload reduction is slightly weaker for the other districts of Maharashtra but does seem to exist in the case of Chhattisgarh’s trajectory as well. This was also observed for the US and Brazil in recent months.

Two features stand out from the successful cases in the recent past: First, that the mobility score has to fall to at least minus 40% and that the mobility reduction has to be sustained for at least a few weeks. Amravati, for instance, saw its cases fall in March after its mini lockdown but again witnessed a rise as the mobility score inched towards pre-pandemic levels.

Gujarat, which opted for a milder containment measure than Maharashtra, has gradually brought down its mobility score over the past month, and at the moment, daily caseload growth rates are slowly, but surely, falling.

Finally, it is also worth looking at districts along state borders where one state has imposed strong restrictions and the other has not. Again, in the limited set of cases, we find suggestive evidence of mobility reductions having a significant beneficial effect.

AVOIDING MAYHEM IN MAY

During the peak period of the second wave of the influenza pandemic in India in November 1918, I have estimated that around 200,000 Indians died on a daily basis. The current covid-19 wave, devastating as it is, will mercifully not reach those figures. But unfortunately, things will get worse in May, relative to April, before the situation starts to improve.

The current dire situation demands more restrictions to be put in place. Containment also needs to be enforced

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WHAT

States are imposing restrictions to combat the second wave, mostly avoiding the word “lockdown”. There’s a robust negative correlation between covid caseload and mobility.

BUT

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X FACTOR

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in a wider range of districts, as indicated on the map where scores are above the -40% mark in many parts of the country. In particular, eastern Uttar Pradesh and Bihar demand close attention as enforcement of restrictions seems to be a systemic issue, starting with last year’s lockdown. And hopefully, the election frenzy will die down quickly before people start to die in large numbers in the four states that went to the polls, which also need to have further reductions in mobility.

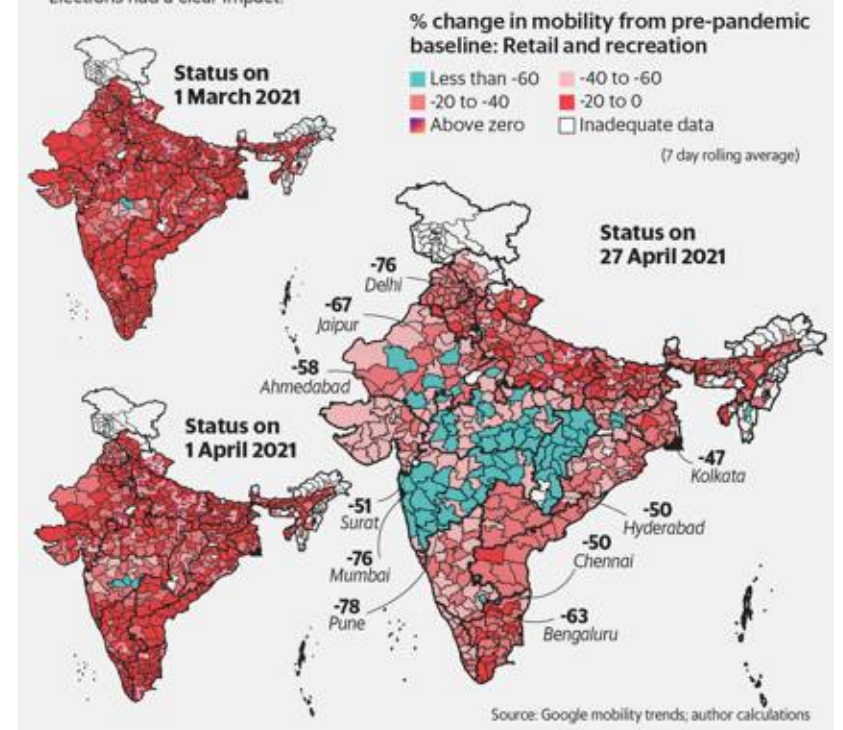
As of 27 April, all the ten largest Indian cities had mobility scores of less than -40%, with Mumbai and Delhi closer to -80% and Chennai, Kolkata and Hyderabad closer to the -50% mark.

Kolkata in West Bengal in throes of election, in particular, began its mobility reductions the last, only on 21 April, and even in the case of Chennai and Hyderabad, the mobility reductions have been very slow. You can expect more restrictions in these three large cities in the weeks ahead. Or else, cases will inevitably spiral out of control.

It is equally important for Mumbai and

THE CONTAINMENT CONUNDRUM

As the covid second wave took root, mobility levels at the all-India level took time to drop chiefly because of four states: Kerala, Tamil Nadu, West Bengal and Assam. Elections had a clear impact.



Source: Google mobility trends; author calculations
SARVESH KUMAR SHARMA/MINT

Delhi to not remove the restrictions currently in place until the daily caseload curve has come down substantially. All these restrictions do have an economic cost, but it is worth reminding ourselves that a demographic disaster is also an economic disaster. In 1918, for instance, the economic output collapsed by over 10% even in the absence of major restrictions because of mass mortality.

Finally, restrictions on mobility do not necessarily have to be binaries in terms of lockdowns or not.

The independent Lancet covid-19 commission India task force has just published a detailed checklist on containment strategies based on the severity of the covid-19 caseload and this could serve as a template for state and district-level authorities.

At the minimum, there has to be a nationwide ban on large gatherings, and

based on the caseload burden in particular regions, authorities should curtail gatherings exceeding 10 or 50 people.

When announcing these restrictions, relief measures in terms of compensation to affected workers who are outside the social security net should also be simultaneously considered, as was done recently in Maharashtra.

In the weeks ahead, vaccination centres themselves run the risk of becoming super-spreader zones and the crowds at these centres have to be closely monitored.

But however one sees it, the most likely scenario for the next one month is that the entire country will be in a state of effective lockdown, whether or not officially mandated by the central or state governments.

Chinmay Tumble is a faculty member at IIM-Ahmedabad and author of *India Moving and The Age of Pandemics*.

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