

June 21, 2021

Learning from the Mumbai 'Model'

Decentralisation and data analytics in dealing with the pandemic

By: Anjali Karol Mohan

The success of the 'Mumbai Model' in managing the second wave of the pandemic shows the importance of decentralisation, and the salience of involving a wide range of stakeholders and relying on data analytics.

As the second wave of the Covid-19 pandemic swept through India, it was clear that governments at the city, state and union had ignored warning about the possibility of another wave. But for one exception, Mumbai seemed to have a better grip of the situation. The print and social media has eulogised the 'Mumbai Model' with many calls from courts of law, ordinary citizens and policy makers to emulate this model. The Mumbai Model is premised on decentralised action and collaborations, and is driven by data. It is critical to note that the three are intrinsically linked. The absence of either of these is likely to jeopardise the model. Critically, the success of the model is backed by (a) a gamut of proactive decisions communicated precisely and clearly through government orders; and, (b) by a [strong political will](#) that ensured its success. Further, while the model delivered for Mumbai, it is critical to remember that it will require contextualising when implemented in other cities. Merely setting up 24X7 war rooms without adequately equipping them and not leading from the front will lead to another reactive effort, having little or no impact on the current crisis.

What is the Mumbai model?

While Maharashtra was amongst the first states to be hit by the second wave, by mid-May the daily increase in infections [fell below 2000](#) as against the peak in the first week of April when it recorded 11,000 plus cases. While April saw the number of positive cases escalating in several cities and this trend continued, the numbers started stabilising in Mumbai soon after. In an interview with [The Print](#), the Mumbai Municipal Commissioner spoke of the strategies deployed to bring in this stabilisation. To begin with, the administration of Mumbai was amongst the few or perhaps the only one that did not wish away the second wave as evidenced by the decision [to not wrap up its Covid infrastructure](#) post the first wave. Its philosophy of 'chase the virus,' rather than awaiting the virus, points to the city's proactive stance as against the common reactionary behaviour seen across other cities.

Between the two waves, the Mumbai administration geared the system to function on an 'auto-pilot' mode that relied on (a) a decentralised approach; (b) generating, collating and utilising ground up data; and, (c) forging collaborations with a wide range of stakeholders. Needless to say, Mumbai had already benefitted from relying on these three propositions in managing the spread of the virus in Dharavi, one of its largest and densest slums, supporting approximately one million population in an area of 2.5 sq. kms. Dharavi marked the entrance of the virus with a death in April 2020. Thereafter, the administration collaborated with the communities and doctors to trace, track, test and treat (4Ts) the infected patients in institutional facilities. The latter were a result of repurposing existing school, sports complexes and other public infrastructure. Additionally, private medical practitioners, social activists, community leaders, and non-governmental organizations (NGOs) were roped in to battle the epidemic on a war footing. Dharavi had [lessons](#) to offer which were taken on board to manage the crisis at the city level, in the second wave as well as in 2020.

The pandemic and technology

When the virus spread across many cities during the first wave, as an immediate response, several states and municipalities converted the smart-city-policy-enabled Integrated Control and Command Centres (ICCC) into Covid Care war rooms. These war rooms relied on a slew of technologies – mobile apps, GIS maps and GPS amongst others. Referred to as [COVtech](#), technology was deployed to monitor and manage the situation. Some examples of deploying COVtech include monitoring and advising citizens under self-quarantine and telemedicine (Mangalore, Karnataka); setting up dedicated Rapid Response Teams (RRT) and ward wise Mobile Action Units (Jabalpur, MP); setting up an integrated data dashboard and mapping Covid-19 cases using geo-spatial systems (Pune, Maharashtra); setting up a public dashboard providing updates to residents (Surat, Gujarat); and GIS Mapping of Covid-19 cases to tracking healthcare personnel using GPS and heat mapping technologies (Bengaluru). The potentially progressive dimensions of the who and how of COVtech in the war rooms is discussed within [scholarly](#) and [practitioner circles](#). In the initial phase, the efforts of [Bengaluru's war room](#) were lauded in effectively managing the virus. Yet, it is Mumbai that has managed to leverage the potential of technology in the most successful way.

Decentralising and empowering the local

As in other cities, Mumbai too set up a centralised war room only to disband it as early as in May 2020. Instead, the city established decentralised ‘ward war rooms’ (WWR), one for each of the 24 wards of Mumbai. Each WWR is equipped with technology-enabled dashboards and a range of human resources. While COVtech may appear critical and perhaps ‘central’ to the operation of the WWRs, in effect, it is clear that the deployment of COVtech is ‘peripheral’ to some of the other ‘central’ decisions of the administration that allowed a successful leveraging of technology.

|| [A] decentralised and disaggregated approach reduced the pressure significantly not just on the helplines but on the entire system of providing aid and hospitalisation.

To illustrate, the decision to ban the numerous labs from handing over Covid test reports directly to the positive patients brought much-needed relief to a central helpline that was set up to manage the calls. The direct communication between the testing labs and the patient which usually happened at 7 PM meant an overload of panic calls to the control room, effectively jamming the central helpline and an eventual technology collapse. The administration resolved this flaw by mediating the messages to the public by collating Covid reports, sifting through them to determine the degree of criticality of the patient before reaching out to them. This process helped the administration in deciding the degree of hospitalisation. And in helping patients decide whether to avail hospitalisation at all or to avail of the stay-at-home care regimen. This was communicated between 6-8 AM, thereby allowing for a sufficient response time and a relatively non-panic daytime atmosphere. Thus, there was planning in managing data, collating and cleaning it and then using it to manage the patients as well as the response system. The administration claims that the peak of over 11,000 positive reports when decentralised to the WWR meant approximately 400-450 calls per room which, given its 30 telephone lines, meant communication and follow-up with no more than 30-40 families. Such a decentralised and disaggregated approach reduced the pressure significantly not just on the helplines but on the entire system of providing aid and hospitalisation.

Collating and utilising data

While coordinating and managing the ground situation, the WWR were responsible for data collation as well as analysis that allowed for sound decision making, especially in streamlining the triaging of the patients. Essentially, this meant that the WWR would, based on the test reports as well as data collected from patients on their condition, determine the level of severity and eventually determine the need for hospitalisation and the kind of bed requirement. The BMC bed tracker that tracked beds across 172 public and private hospitals in the city allowed for appropriate and quick allocation of beds. The WWR is **tasked with updating the numbers in real time**. In addition, the WWRs also collate the data from calls from patients who are self-reporting with symptoms. This data is then used to coordinate the care and monitoring of these patients via the ground staff, while also ensuring hospitalisation where necessary through the BMC bed allocators. Effectively, it translates into managing data on patients from testing labs and from the patients themselves, ambulances, hospitals (with the three types of beds) and the crematoriums where needed, all in an integrated manner. Notably, while data has proved critical in managing the ground situation, had it not been for the collaborations and the partnerships that the municipality built, the data would remain mere statistics.

Driving collaborations and partnerships

While each WWR was effectively communicating and coordinating patient response and care within their jurisdictions via telephones; dashboards; bed trackers and allocators; and ambulances, what made this possible was the decision to rope in a much wider stakeholder basket. Given that each WWR has 10 dashboards and numerous telephone lines to coordinate responses and care, human resources such as doctors and medical teams, telephone operators and attendant infrastructure, such as ambulances were the need of the hour. The administration’s decision to incentivise final year medical students and newly graduated doctors and nursing staff, across the state to join hands reaped benefits. In addition, it also pushed its own siloed structure by asking the transport commissioner to ape the “election time” situation by re-purposing 800 SUVs to function as ambulances. Each WWR was equipped with 10 ambulances, 10 telephone operators and 10 doctors with their teams of medical staff and nurses.

The buck does not stop here. While Uber was roped in for their software to track ambulance movements, in a game-changing move the administration co-opted 172 hospitals both private and public, with instructions to not admit patients directly. The allocation of beds was done through the WWRs and was done at the house of the patient, depending on their criticality. In an earlier master stroke in 2020, Maharashtra government had capped the cost of beds across the government and private hospitals. Irrespective of being allocated a government or a private facility, the patient had to pay Rs. 4,000 for an oxygen bed, Rs. 7,500 for an ICU bed and Rs. 9,000 for a

ventilator bed.

[I]n a pan-India context, where the failure of the state machinery has been a rule, Mumbai’s strategy shows the centrality of the state in its decision to decentralise, to collate, sift and rely on data analytics and to forge collaborations.

Similarly, the 47 crematoriums across the city were managed and coordinated with the assistance of IIT Bombay that created dashboards, thus allowing the last rites to be performed with dignity and in relative privacy, a privilege that many cities across the country have not afforded their citizens. To afford and operate these collaborations the municipality was quick to bring out clear and crisp government orders. The municipality continues its approach of collaboration with non-state stakeholders in its vaccination drive as well as in the operation and management of some of its Covid care infrastructure such as the jumbo facility that it is currently expanding to augment bed capacity with 20,000 beds across the city.

Using the Mumbai experience to avoid myopia

While the number of positive cases declined substantially in Mumbai, by mid May the municipality claimed that [approximately 5,500 beds + 3000 oxygen beds were lying vacant](#) in the city, indicating the success of a strategy that is decentralised, collaborative and data driven. Additionally, in a pan-India context, where the failure of the state machinery has been a rule, Mumbai’s strategy shows the centrality of the state in its decision to decentralise, to collate, sift and rely on data analytics and to forge collaborations. The municipal commissioner in leading from the front sent out a powerful message, emphasising the need for the state to act as a central hub, one that should assume responsibility in directing and managing the private sector to help it deliver its mandate.

Much has already been written on the success of the Mumbai model. [Policy directives](#) recommending this model are streaming in to manage the current second wave onslaught while also gearing up for the third wave. While Mumbai has paved the path during the second wave, Kerala relied on a [similar decentralised and collaborative approach](#) in containing and managing the virus in its first wave. Both these models have evidenced decentralised collaborative and data driven governance as the way forward to ease everyday living for India’s vast majority. Limiting the learnings from these success stories to manage the pandemic or similar disasters would be myopic. Clearly, India will benefit from a simultaneous scaling and institutionalising of such an approach. The onus lies with the state and local governments. That Mumbai is a rich municipality is a fact. There are systems and processes that have rendered the municipality cash-rich, enabling it to manage the second wave of the pandemic successfully.