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Pandemic precarity and the complicated case of Maharashtra

Interrogating state capacity and its fault lines

Manish K Jha*

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United Nations University World Institute for Development Economics Research

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Abstract: The state of Maharashtra and the city of Mumbai have been referred to as the epidemic epicentre of India since the time of the plague of 1896 and influenza epidemic of 1918. During the COVID-19 pandemic too, the state experienced the highest cases with maximum fatalities. Against the structural backdrop of India's underfinanced public health infrastructure, this paper engages with the subnational state's capacity, legitimacy, and authority in managing the pandemic. The paper highlights the socio-economic and spatial-demographic context to explain the reasons behind the severity of the pandemic in Maharashtra. Through an analysis of regulatory information at different levels during crucial phases of the pandemic, and statistics about tests, caseloads, medical resources (such as hospital beds, essential drugs, and oxygen), migrants' welfare, excess deaths, vaccines, etc., the paper explores how knowledge about the unfolding crisis and the capacity to respond kept changing as the pandemic progressed. The emphasis is on demonstrating how the state improved its response, from a situation of confusion to an augmentation of infrastructure and a coordinated response. Despite fiscal constraints and centre-state tensions, the reliance on rational bureaucracy, scientific knowledge, and the decentralization of the response helped to develop several models and good practices that were widely acknowledged. The paper emphasizes that the case of Maharashtra underscores the importance of decentralized planning and recognizes the value of collaborative federalism.

Key words: pandemic, migrants, excess deaths, vaccines, COVID-19, oxygen, capacity

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1   Introduction

While the COVID-19 pandemic led to extraordinary crises worldwide, research suggests that its fallout in terms of socio-economic costs has been particularly stark for developing countries (Valensisi 2020). In dealing with catastrophic pandemics, it is expected that states with better capacity, legitimacy, and ability to exercise their authority will demonstrate better preparedness. However, the received wisdom about the relationship between state capacity and authority vis-à-vis crisis response has not been evenly substantiated in the case of COVID-19. Drawing on contemporary writings, Gisselquist and Vaccaro (2021) reiterate that the success of a pandemic response needs to be examined through the competence of the state apparatus. In the context of COVID-19, a competent state apparatus and efficient governance unfold in the state's capacity to respond to public health concerns and its authority to ensure effective lockdown, containment, quarantine, and adherence to associated prescriptions. Here, one observes wide variations across Indian states. The state's legitimacy is manifested by securing people's approval of tough decisions and their consent to uncomfortable and unconventional protocols. As several aspects of pandemic management are linked to behavioural change and adaptation, this puts the relationship between state and society on challenging terrain. Against this backdrop, the state's legitimacy is affirmed if it manages to convince individuals and the community to absorb the idea of responsibilization and adapt to the demands of the situation. The demonstrated outcome of state authority and legitimacy is contingent upon policies, implementation, and the state-society relationship.

The state of Maharashtra had over 19 per cent (6,550,856) of all COVID-19 cases (33,765,501) and about 31 per cent (139,067) of all deaths (448,372) in India in two waves between March 2020 and September 2021, demonstrating the lethality of the infection with its high positivity and death rates (Figure 1). In September 2020, of India's nearly 200,000 new cases, 46 per cent were recorded in Maharashtra alone. This was when a central government report indicated a shortage of 20 per cent in primary health centres and 37 per cent in community health centres in rural areas of the state. The annual expenditure on health in Maharashtra was among the lowest in India: the national per capita average was US$24, whereas the per capita average of the state was US$19 (Barnagarwala 2020). Although the scientific and epidemiological explanation for Maharashtra's excessive caseload and mortality remains elusive, specific structural characteristics help us to comprehend the phenomenon. Maharashtra is one of India's most urbanized and industrialized states, and its capital city, Mumbai, is the country's financial and commercial hub. With an estimated population of 124.7 million, Maharashtra is the second most populous state. It also has one of the highest footfalls of international travellers. Mumbai Metropolitan Region has a population of 23.59 million and is home to the country's busiest seaports and airports. Furthermore, UN-Habitat data suggests that Mumbai has 31,700 residents per square kilometre (Brodie 2017). The population density in several slums is over 300,000 per square kilometre, almost ten times the city's average. Mumbai has a sizeable slum-dwelling population, constituting 42 per cent of the total population and occupying eight per cent of the liveable land area (Ashar 2016); however, the unofficial estimate of the slum population is much higher. These slum localities disproportionately felt the impact of the pandemic. In their report, Venkatachalam and Memon (2020) foreground the steep increase in the proportion of Mumbai's containment zones that were found in slums—from 31 per cent on 14 April 2020 to 57 per cent on 11 May 2020, rising to 96 per cent in June 2020.

Figure 1: Cumulative numbers of COVID-19 cases and deaths in Maharashtra
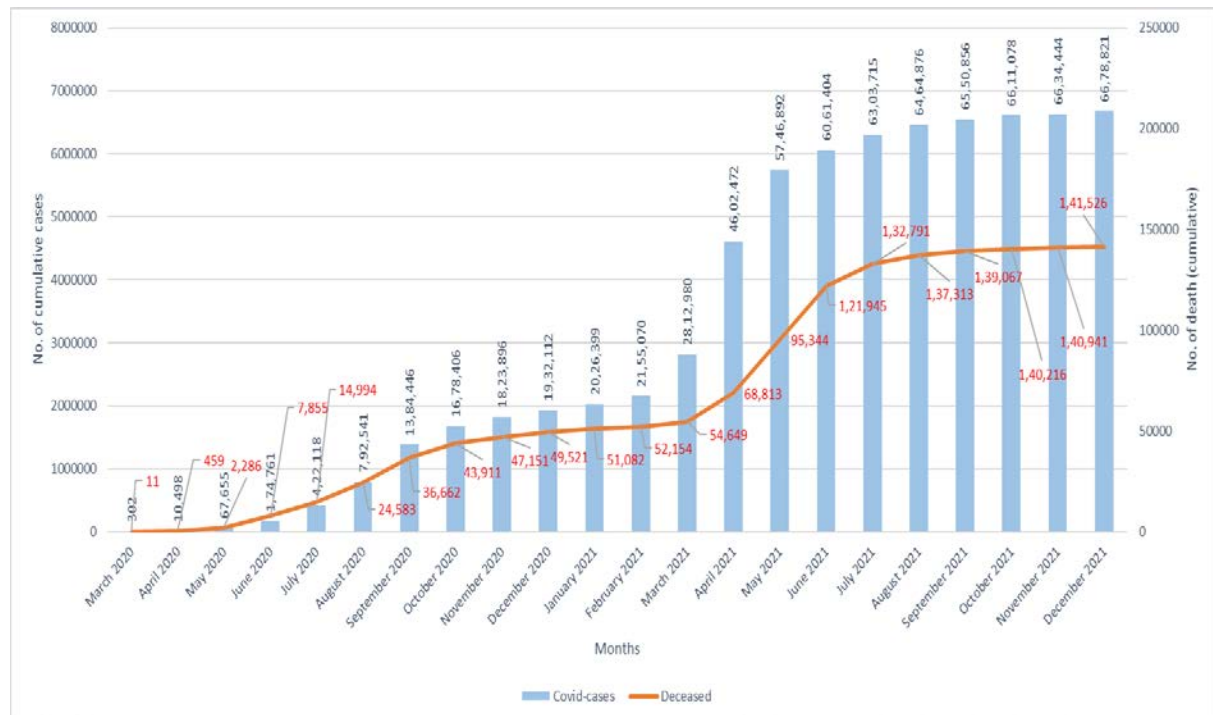
Source: author's illustration based on data from Covid19bharat.org (2022).

Roughly 50 per cent of COVID-19 cases in the state were reported in four major cities: Mumbai, Thane, Pune, and Nagpur. These cities are characterized by deep inequalities in incomes, healthcare access, educational services, living conditions, and other essential civic amenities. The extent of urbanization and population density, high international exposure, and extensive slum dwellings with cramped living arrangements made these cities vulnerable to the rapid spread of the disease and turned the state into a hotspot of infection. The public health infrastructure in urban areas had not been able to keep pace with population growth, and its apparent shortcomings certainly contributed to the initial stress and chaos. This indicates the limits of the institutional capacity of the state.

While the excessive caseload and death rate raised concerns about the pandemic situation in the state, subsequent efforts and strategies by the state government were acknowledged and appreciated by international organizations, the judiciary, and other stakeholders. In a political structure of federation with a unitary bias,[1] Maharashtra's pandemic context affirmed the importance of the state's abilities to regulate, manage, and control people's subnational abilities (Rose 2007). This paper explains the state's capacity, authority, and legitimacy (and limitations) to deal with grave and unanticipated emergencies. To comprehend the complex nature of the state's pandemic situation, I ask the following questions: what were the probable reasons behind Maharashtra's high caseload and death rate? How did the state institutional structure demonstrate its capacity vis-à-vis public health demands and pandemic protocols? How did the government assert its authority in maintaining law and order, enforcing containment and quarantine requirements, etc.? How did the state-society relationship unfold during the pandemic? How were

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[1] Under the Constitution of India of 1950, the distribution of powers between the different levels of government tilts the balance in favour of a strong centre.

deficits in health and related infrastructures addressed? How did the state secure conformity, consent, and overall legitimacy against the odds?

Following the complicated pandemic context set out in this introduction, the paper is divided into eight further sections. Section 2 briefly explains the history of the state's encounter with the epidemic, and section 3 outlines the unfolding of the pandemic and the evolving state response. Section 4 elucidates the state's reliance on scientific and expert knowledge when demonstrating its capacity and authority. Section 5 juxtaposes the fiscal context and constraints vis-à-vis the state's responsiveness. Section 6 engages with welfare efforts amid despair and precarity, while the specific context of the lives and circumstances of migrants and the urban poor are the focus of section 7. Section 8 discusses prevailing tensions, confusions, and questions of state legitimacy amid political entanglements. Section 9 concludes.

2   The state and its brushes with epidemics

Maharashtra has historically been referred to as the epidemic epicentre of India due to frequent outbreaks of cholera (1820), plague (1896–98), and influenza (1918–20). In addition, smallpox, malaria, and tuberculosis continued in epidemic proportions and resulted in large-scale fatalities. The plague of 1896–98 was a grave epidemic that witnessed the evolution of an aggressive response by the colonial government through mandatory hospitalization, segregation of contacts, and disinfection of plague-affected houses (Klein 1988). Oversees travellers were mandatorily inspected, and people suspected of infection were detained. Stringent searches of residences were conducted by colonial officials to identify the sick, and accusations of forced examination and misconduct, especially against women, were detested and resented, leading to conflict and violence. Indeed, in 1897, Walter Charles Rand, the chairman of the Plague Committee, was assassinated in Pune because of his high-handed intervention. To assert its authority and control the disease, the colonial government brought in the Epidemic Diseases Act, which enabled it to exercise exceptional power, deploy extraordinary measures, and impose comprehensive protocols and penalties to tackle pandemics (Government of India 1897).

During the influenza epidemic of 1918–20, during which the Bombay presidency is estimated to have lost over six per cent of its population, the colonial government's response was marked by a lack of capacity and authority that was completely at odds with the strict procedures and protocols enforced during the plague of 1896. There were numerous reasons for this differential response, the most obvious of which was health professionals' preoccupation with responsibilities related to World War I. Chronicling the intensity of the epidemic, Ramanna (2003: 84) has highlighted that 'mortality was estimated at 1,086,758 for June to December 1918', and the Bombay presidency remained the most severely affected hotspot. After a gap of exactly a century following the influenza pandemic, the state encountered another massive pandemic: COVID-19. Unlike many East Asian and West African countries, which had experienced SARS and Ebola respectively in the past and had gradually built up their healthcare capacities and developed emergency protocols, in Maharashtra the learnings from the past and preparedness in terms of public health infrastructures were largely ignored. Commentators at the start of the COVID-19 pandemic 'envisage[d] the reenactment of past scenes, including flight from the cities, victimization of the poor, and the questioning of state authority' (Arnold 2020: 569). Despite substantial progress in medical sciences and the state's financial capacities, the crisis exposed the inadequacy of accessible public healthcare. It demonstrated some resemblance between past and present pandemics.

3   The unfolding of the pandemic and the evolving response: from chaos to consolidation

State capacity is realized through financial resources and institutional capabilities to carry out important policies that influence socio-economic outcomes; however, these capacities evolve differently in different contexts (Savoia and Sen 2014). In terms of financial resources, Maharashtra is the leading contributor to India's economy, with a share of 14.2 per cent of India's gross domestic product (GDP). However, despite its economic resources, an increase in population, and escalating healthcare costs, the state's allocation for public health in the past five years has remained limited and static at around four per cent of its budget. With less than 0.5 per cent of its state GDP going to health, Maharashtra's expenditure is far below the national average of 1.3 per cent. According to the economic survey of 2019–20 (Government of India 2020), in 2018 the state's health institutions had 127,000 beds, averaging 103 beds per 100,000 people. Fifty years ago, in 1971, 'the state had 43,823 beds in government institutions, which worked out to 88 beds per 100,000 people' (Jain and Debroy 2020), and this indicates the state's sluggish approach and strategy. Out of 54,000 allocated jobs in public health departments, 30 per cent (around 16,000) posts were unoccupied in 2020, exposing a severe shortfall, and there were only six government doctors per 100,000 people in the state (Jain and Debroy 2020). On the other hand, the extent and influence of the private sector in the state's healthcare system is striking: nearly three quarters of the state's residents prefer private hospitals over government hospitals. Before the pandemic, the 75th round of the National Sample Survey (released in 2019) stated that 73.7 per cent of all people hospitalized in the state were treated in private hospitals (Shaikh 2020).

Although 50 per cent of hospital beds and ventilators were concentrated in five states in 2020, with Maharashtra having a significant share at 12.2. per cent, the availability of ward beds, intensive care unit (ICU) beds, and ventilators in the state was inadequate to treat the sizeable number of critically ill COVID-19 patients (Kapoor, Hauck et al. 2020). The outbreak of COVID-19 exposed the deficiency of the public health infrastructure, which led to initial chaos and panic. Table 1 shows that the state had only 711 public hospitals, while the number of hospitals in the private sector was 2,492. The expanded and well-developed private sector provided services to a large number of patients during the pandemic (Shaik 2020), albeit with substantially higher expenditure. Due to an inadequate infrastructure that needed to be upgraded, the state encountered glitches while activating a contract-tracing system, and it initially faced a situation where staff were not turning up to work. There was disorder due to the scarcity of necessary equipment, protective tools, and testing kits; news of people being turned away from hospitals raised the alarm.

Table 1: Hospital beds, ICU beds, and ventilators (in numbers), 20 April 2020

	Hospitals in public sector	Hospitals in private sector	Hospital beds in public sector	Hospital beds in private sector	ICU beds in public sector	ICU beds in private sector	Ventilators in public sector	Ventilators in private sector
Maharashtra	711	2,492	51,446	180,293	2,572	9,015	1,286	4,507
India	25,778	43,487	713,986	1,185,242	35,699	59,262	17,850	29,631

Source: author's compilation based on data from Kapoor, Sriram et al. (2020).

In August 2020, Mumbai city's fatality rate of six per cent for identified COVID-19 cases was three times higher than the national average. Figure 2 shows the severity of pandemic in the state in terms of positivity and fatality rates. Prisons, residential homes, and other institutional establishments also witnessed a massive surge in cases. In the district psychiatric hospitals of Pune,

Thane, Nagpur, and Ratnagiri, 883 patients with mental illnesses became COVID-19 positive between March 2020 and September 2021, a 6.3 per cent positivity rate (Chakraborty 2021a).

Figure 2: Case fatality rate (%) and test positivity rate (%) in Maharashtra

	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021	November 2021	December 2021
Tests	135694	327483	506984	1163559	2011403	2640082	2182198	1888981	1891249	1869535	1667444	3507531	7314139	7948772	6582896	6329659	6009277	4763088	3927237	2844183	3498759
CFR	20.5	6.2	8.3	4.1	2.9	2.3	1.7	1.8	1.6	1.5	1.1	0.7	1.0	1.7	5.9	3.8	2.4	1.7	1.4	2.3	2.1
TPR	7.5	17.5	21.1	21.3	18.4	22.4	13.5	7.7	5.7	5.0	7.7	18.8	24.5	14.4	4.8	3.8	2.7	1.8	1.5	0.8	1.3

Source: author's illustration based on data from Covid19bharat.org (2022).

From this deficient situation, the state and its agencies bounced back and went into action to fortify the health system and put infrastructures in place. The first case of COVID-19 in the state was identified on 9 March 2020, when a couple in Pune tested positive. The Epidemic Diseases Act of 1897 was invoked on 13 March, which enabled the state to hospitalize symptomatic cases; on 20 March all offices were closed down, and people were advised to stay at home. Without waiting for the central government's official protocols for screening and associated procedures, on 16 March the state announced that passengers arriving from the United Arab Emirates, United States of America, and Saudi Arabia would be compulsorily quarantined. On 23 March, a state-wide lockdown was imposed, which included the closure of state borders and the suspension of public transport services. At the same time, gatherings of more than five people in any public place were prohibited (PRS 2020b). A nationwide lockdown followed on 25 March. These administrative, legal, and disciplinary provisions provided emergency powers to the state for containment, isolation, evacuation, zoning, guarding, quarantining, ensuring masks and handwashing, etc. Although cases of harassment and rights abuses during lockdown were reported from many parts of the country, Maharashtra's state agencies were mostly sensitive in their handling of people. As the public health response for pandemics at the subnational level had limited established mechanisms, protocols for tracking, tracing, isolation, diagnosis, nursing, and treatment evolved gradually alongside the progression of the pandemic. The State Reserve Police Force ensured rigorous lockdown protocols in densely populated settlements. New containment zones were regularly identified, a strict vigilance mechanism was put in place, and well-arranged confinement measures were operationalized. Steps were taken to monitor people's movements through the digital mapping of containment zones and the geo-tracking of patients under quarantine. Details per ward of the quarantine centres and containment zones were regularly updated and put out on government websites and social media.

Moreover, open spaces and vacant buildings were identified to establish large-scale quarantine facilities. By the last week of April 2020, Brihanmumbai Municipal Corporation (BMC) had reserved 25,000 isolation beds for asymptomatic patients in hotels, sports complexes, and exhibition centres. In addition, 350 municipal schools were equipped with 35,000 beds to enhance

capacity. Wedding halls and sports arenas were repurposed as 'jumbo facilities' with a total of 20,000 beds and kept in reserve (Naik and Marpakwar 2020). To its credit, Maharashtra managed to augment its capacity for COVID-19 isolation beds sixfold within three months. The data shown in Tables 2 and 3 demonstrates the augmentation of health services in the state. The state government also took over 22,980 unoccupied homes from the Mumbai Metropolitan Region Development Authority, Maharashtra Housing and Area Development Authority, and Slum Rehabilitation Authority. These were kept for future use as quarantine centres (Tiwari 2020).

Table 2: Numbers of authorized hospital admissions, 2019–20 and 2020–21

	2019–20		2020–21	
	Non-COVID-19-related	COVID-19-related	Non-COVID-19-related	COVID-19-related
Maharashtra	214,923	4	133,806	89,720
India	7,988,462	4	7,720,145	327,672

Source: Indiastat.com (2021a), reproduced with permission.

Table 3: Numbers of N95 masks, personal protective equipment (PPE) kits, and ventilators provided for COVID-19, 20 July 2021

State/central government institutions	N95 masks	PPE kits	Ventilators
Maharashtra	3,201,000	1,483,000	5,554
Central government	5,979,000	2,641,000	4,418
India	42,279,000	17,691,000	48,446

Source: Indiastat.com (2021b), reproduced with permission.

The state police evolved decentralized and localized mechanisms, and involved community facilitators and religious leaders in spreading awareness and warnings about the lockdown. They simultaneously adopted strategies of consultation, persuasion, and surveillance. Technology-driven security cameras and drones were deployed to keep vigil over high-density slum localities and other crowded informal settlements. Private hospitals were persuaded to cooperate with the government and offer COVID-19 treatment. The government mandated private hospitals to allocate 80 per cent of their beds to be managed and operated by the government. To prevent excessive pricing, they were instructed to publicly declare reasonable itemized charges for COVID-19 and non-COVID-19 healthcare services (Duvendack and Sonne 2021). Since private hospitals had been accused of overcharging patients, the BMC appointed auditors, who audited 31,065 private hospital bills for COVID-19 patients, amounting to US$70,142,137, and cases of overcharging were dealt with. Patients were charged a huge US$1,351 per day for their treatment during the initial phase. In May 2020, the state capped COVID-19 treatment charges. Charges for a COVID-19 patient on a general isolation ward were capped at US$54 a day; the maximum for ICU beds was capped at US$101 per day, and for ventilators at US$121 per day. Further, the state's capacity to extensively conduct reverse transcription polymerase chain reaction (RT-PCR) tests was widely acknowledged. By the third week of September 2021, the state had conducted 57 million tests, ten million of them in Mumbai.

Although there was apprehension about the coalition government's authority and efficiency, relationships among elected and appointed officials were leveraged for pandemic management. The medical and scientific approach was valued. The state task force comprised people with established professional reputations, producing a 'rational bureaucracy' geared towards impartiality, openness, and accountability (Bäck and Hadenius 2008). Furthermore, efforts were made to avoid panic and ensure order in communications and responses. An analysis of 175 significant notifications by the state from 13 March 2020 to 23 April 2021 indicates the constitution of high-level committees, pandemic regulations, prevention measures, lockdowns, containment

measures, a relaxation of the utilization of Member of Legislative Assembly Area Development Schemes, state border monitoring, a patient management protocol, health insurance, vaccine policy, etc. (PRS 2020a). Fearing that overcrowded jails would spread the virus, the government decided to release prisoners on temporary bail or parole. Maharashtra's 47 prisons housed 38,031 prisoners. In May 2020, 10,594 prisoners were temporarily released (Bavadam 2020). The decision was widely appreciated as decongesting a potential hotspot.

4   What worked and how: the Mumbai, Dharavi, and Nandurbar models

Under the leadership of BMC commissioner Iqbal Singh Chahal, who took office in the middle of the first wave in May 2020, a 'Mumbai model' evolved with an emphasis on planning, decentralization, and delegation. The drives that were launched during the first phase of the pandemic in 2020—such as 'Chase the Virus', 'Chase the Patients' (proactive testing, making arrangements for isolation and priority treatment), 'Mission Zero' (a rapid and mobile testing mechanism), and 'Mission Save Lives' (designed to minimize mortality)—remained effective into the lethal second wave (Singh 2021). The testing protocol was changed, and laboratories were prevented from sharing positive test results directly with patients. They were instructed first to inform the BMC, and then to notify patients and counsel them about the precautions that needed to be taken. The BMC allocated hospital beds and advocated home quarantine for patients with mild infections, thus preventing unnecessary extra demand and exposure in hospitals, and saving beds for extreme cases.

The BMC used its decentralized network of primary health centres and took command of civic hospitals and the specialist jumbo COVID-19 centres, assisted by private hospitals whose beds and infrastructures were designated for public use. In a bold decision, the central COVID-19 command centre was scrapped. Instead, a decentralized system was put in place. Accordingly, command posts were set up in each of the city's 24 municipal wards. Each ward was provided with dedicated ambulances, doctors, helplines, support staff, and other essential infrastructures, and each ward was responsible for catering to roughly 700,000 people. This decentralized system and strategy efficiently shared the mammoth logistical challenges. Initially, due to the complex centralized system, the city had found it difficult to cope with the scale of the crisis.

Along with five jumbo COVID-19 care centres across Mumbai with a combined 10,000 beds, the city had an additional 40,000 beds in smaller nursing homes and hospitals (Tare 2021). The decision to replace the central control room with ward-level 'war rooms' in each municipal area instituted decentralized, autonomous power and authority at the level of the assistant municipal commissioner of each ward. Consequently, the nearly 10,000 RT-PCR results that were processed every evening throughout March and April did not overburden a centralized system. On average, each municipal war room had to handle roughly 400 to 500 results. Given the average positivity rate of 20 per cent in April, most wards had to cater for fewer than 100 patients a day. Moreover, in 2021, the BMC introduced walk-in COVID-19 care centres for people who had symptoms but had not tested positive. People were immediately tested for COVID-19; positive cases were transferred to COVID-19 wards, and negative cases to non-COVID-19 wards. The BMC commissioner claimed: 'We were able to save the lives of 22,000 people because of this model— had they not been treated in time, their health would have deteriorated' (Tare 2021). Although there were instances of sporadic spikes in demand and desperation for private hospital beds, on the whole Mumbai—unlike Delhi—did not witness distressing scenes of critical patients struggling for ICU beds or oxygen cylinders, even when active cases were on the rise and reaching up to 80,000 cases a day. The BMC also created a network of housing societies directly connected to ward offices. The secretaries of all these societies were registered with the ward offices. If any

society found a new patient, it needed to inform the ward office, and vice versa. This helped to create containment zones, sanitize the area, and make people conscious of their movements. It also ensured a better record of patients per area. This was widely appreciated across the country, and a Supreme Court judge observed: 'The BMC is doing some great work[. … Other civic authorities] can learn from them' (Tare 2021). The Mumbai model thus relied on a managerial emphasis on foresight, planning, decentralization, and delegation, gave primacy to expert knowledge in leadership, and put state public institutions at the centre of the response mechanism.

Alongside the BMC's Mumbai model, a great deal of attention was given to the Dharavi model. Dharavi is one of Asia's most crowded slum localities and is recognized as the one of world's biggest slums. Around 850,000 people live in roughly 55,000 formal and informal habitat units in Dharavi. It has a population density of 340,000 per square kilometre, and the entire slum is spread across 216.5 hectares of land (Kaushal and Mahajan 2021). At the heart of the city, Dharavi has evolved as a business and entrepreneurship site with 15,000 single-room factories and around 5,000 business units (Alam and Matasuyuki 2020). The area is a hub for small-scale enterprises in leather, pottery, textiles, etc., with an annual turnover of US$1 billion from international exports. With 80 per cent of its inhabitants depending on 450 community toilets, and with eight or nine people living in a hut measuring three square metres, the prescription of social distancing and containment during the pandemic seemed impossible. Amid numerous challenges owing to population density and related vulnerabilities in Dharavi, the BMC remained focused on tracking, tracing, testing, and treating. Rather than waiting for patients to report themselves, the BMC's outreach included pre-emptive testing facilitated through the active involvement of private doctors and local volunteers. Two distinctive containment strategies were enforced: a hundred-metre radius in positive cases, and the sealing of the entire building if there were five or more cases. Despite the spike during the second wave, the numbers of containment zones and sealed buildings fell by 88 per cent and 93 per cent respectively compared with the first wave peak in October 2020. Dependence on containment strategies significantly decreased between the first and second waves.

Furthermore, 'fever camps' were set up in several parts of Dharavi to ensure that people with any symptoms were promptly inspected and tested for COVID-19. The municipal administration proactively dispatched numerous teams of healthcare workers to trace infected individuals. These workers visited door to door, enquired about symptoms, offered screenings, and administered tests to those suspected of having contracted the virus (Altstedter and Pandya 2020). Moreover, rigorous containment protocols were implemented in virus hotspots; drones were even deployed to monitor people's movements and inform concerned officials (Golechha 2020). Many volunteers were involved in delivering dry food items so that people did not have to organize their own food. This strategy confirmed the crucial importance of community participation in containing the spread of COVID-19. While a limited number of seriously ill patients were relocated to other hospitals with better health infrastructures, around 90 per cent were treated in Dharavi itself. It is important to note that while case numbers doubled every 18 days in April 2021, this gradually improved to 43 days in May. Subsequently, it further declined to 108 and 430 days in June and July (Ravi 2020). The Dharavi model drew international acknowledgement, and even the World Health Organization's Director-General publicly appreciated the efforts.

While Dharavi took the spotlight in the first wave, the remote rural and tribal district of Nandurbar won special attention during the second wave. Nandurbar evolved a model that ensured the optimum use of medical oxygen. At the peak of the second wave, on 29 April 2021, when the country faced a significant shortage of oxygen and ICU beds, Nandurbar had 150 empty beds and two oxygen plants that could generate 2,400 litres per minute. Patients from neighbouring states travelled to be admitted to the district's hospitals. It is important to highlight that there had been no oxygen plant in the district until September 2020. Following a fall in COVID-19 cases in September 2020, Nandurbar collector Dr Rajendra Bharud was instrumental in setting up oxygen
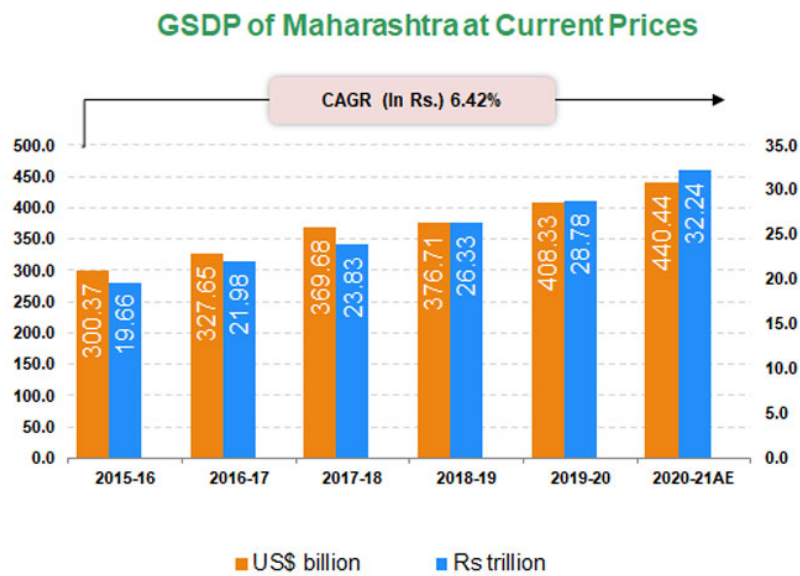
plants at a time of relative ease elsewhere in January and February 2021. District planning and development funds and state disaster relief funds were utilized. In addition, Nandurbar's COVID-19 dashboard was made dynamic and user-friendly, and this was appreciated by the Bombay High Court. The live dashboard gave specific details regarding ambulance and bed availability, etc. It also provided the latest details of hospitals (both government and private) where beds were available, including ICU beds. The district administration arranged 7,000 isolation beds and 1,300 beds with ICU or ventilator facilities. The Nandurbar model entailed the state government entrusting the local administration with the authority and autonomy to better address the challenges. Decentralized planning and decision-making helped to build the state's capacity.

The common attributes of the three cases presented here are the decentralization of power and responsibility, leadership by officials, context-specific responses, and a focus on vulnerable and marginalized population groups, i.e. the urban poor in a congested settlement and remote tribal communities with inadequate infrastructure. At a time of acute oxygen shortage, the state realized that refilling standard cylinders for oxygen supply was a tedious and unsustainable process. It was decided to opt for larger cylinders with ten times the capacity of standard cylinders. Two such large cylinders were deployed in the facility that had the most beds, and this was enough to cater to the needs of all beds for two or three days (Kakani 2021). Even after the slowing down of the second wave, the government decided to issue a district oxygen management plan. The district collectors were advised to augment storage capacity, augment existing pressure swing adsorption plants, and monitor the availability of oxygen cylinders.

5   Fiscal context and constraints: implications for capacity and authority

To a great extent, a state's capacity is inextricably interlinked with revenue sources and financial resources, which have direct implications for investment in public health and crisis mitigation. Figures 3 and 4 show that while Maharashtra's gross state domestic product (GSDP) grew by at around 11.77 per cent between 2011–12 and 2017–18, the net state domestic product (NSDP) grew by around 11.75 per cent during the same period. Maharashtra's GSDP was INR26.62 trillion (US$366.67 billion) in 2020–21. The GSDP increased at a compound annual growth rate of 6.42 per cent from 2015–16 to 2020–21. While Maharashtra's GSDP per capita was INR234,000 (US$3,100), the NSDP per capita was reported at INR202,130 (US$2,704). The primary sources of revenue at the subnational level in India are tax and non-tax revenues, shares in central tax, and grants in aid from the central budget. Over and above this, there are grants to deal with disaster relief. With the pandemic-induced lockdown, Maharashtra's revenue collapsed, which undermined the state's ability to augment its expenditure on health and welfare precisely when such spending was needed most. The collection of the goods and services tax—the principal revenue source, accounting for over 40 per cent of the state's revenues (Subramanian and Felman 2021)—declined by more than 44 per cent between April and May 2020, and by more than 30 per cent between April and August 2020. However, the Maharashtra government claimed that despite a shortfall in revenue collection, it had ensured priority funding to the core areas of public health, medical training, and drugs. Further, the allocation of relief and rehabilitation, food and civil supplies, and shelter was also prioritized during the pandemic (Economic Times 2021).
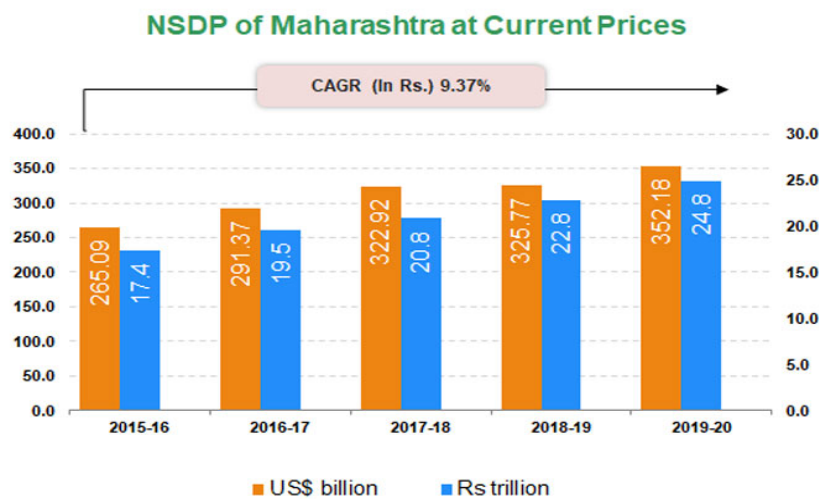
Figure 3: GSDP of Maharashtra

GSDP of Maharashtra at Current Prices

CAGR (In Rs.) 6.42%

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21AE
US$ billion	300.37	327.65	369.68	376.71	408.33	440.44
Rs trillion	19.66	21.98	23.83	26.33	28.78	32.24

■ US$ billion ■ Rs trillion

Note: Exchange rates used are averages of each year, AE- Advance Estimate
Source: MOSPI

Source: IBEF (2022), reproduced with permission.

Figure 4: NSDP of Maharashtra

NSDP of Maharashtra at Current Prices

CAGR (In Rs.) 9.37%

	2015-16	2016-17	2017-18	2018-19	2019-20
US$ billion	265.09	291.37	322.92	325.77	352.18
Rs trillion	17.4	19.5	20.8	22.8	24.8

■ US$ billion ■ Rs trillion

Note: Exchange rates used are averages of each year
Source: MOSPI

Source: IBEF (2022), reproduced with permission.

However, one constraining factor was associated with the changed policy emphasis on relief funds. Even though there was already a statute-based National Disaster Response Fund (NDRF) and an existing Prime Minister's National Relief Fund with about US$500 million in its reserves, the Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM-CARES) was formed on 27 March 2021. Set up as a public charitable trust, PM-CARES received huge donations from public and private institutions, including corporate contributions. Substantial resources from

corporates would otherwise have been secured by Maharashtra because of its locational advantage as the financial capital. The fund was kept outside of statutory public accountability and mandated audits by India's Comptroller and Auditor General. Unlike with the NDRF and Prime Minister's National Relief Fund, central government is not obliged to provide details about PM-CARES under the Right to Information, and the money received does not form part of the Consolidated Fund of India (Subramanian and Felman 2021), which is the repository of all revenue and capital receipts. Although the fund attracted huge donations, its creation as a parallel fund alongside the NDRF's clearly arranged federal division of funds raised concerns regarding transparency and accountability.

Moreover, the Disaster Management Act of 2005 makes central government responsible for allocating funds for the 'prevention of disaster, mitigation, [and] preparedness' and ensuring 'cooperation and assistance to state governments as requested by them' (Ministry of Law and Justice 2005). The 2005 act mandates a dedicated State Disaster Response Fund (SDRF). Maharashtra received US$487,235,414 during the financial year 2020–21, which coincided with the pandemic's first phase; it received US$215,633,895 as the first instalment on 3 April 2020. In addition, it received US$1,437,588,058 for expenses related to natural disasters, a part of which was allowed to be used to fight the pandemic. During the second wave, central government released the first instalment of the SDRF in advance for expenses related to the cost of oxygen generation and storage plants, ventilators, and the strengthening of patient transport and associated services. This advance was also to be used for COVID-19 hospitals and care centres, thermal scanners, PPE kits, testing centres and units, and protocols related to containment zones (Sputnik News 2021). In September 2021, following a Supreme Court ruling regarding compensation for COVID-19 deaths, central government revised the provisions for assistance under the SDRF, permitting states to pay an *ex gratia* amount of INR50,000 (US$674) to the family of anyone who had died due to the pandemic. Since Maharashtra had recorded the highest fatalities, it faced the highest compensation payments. Against the state's official count of 142,000 COVID-19 deaths, Maharashtra received 217,000 applications for *ex gratia* payments up to 18 January 2022. In 2020, the BMC spent around US$227,465,257 tackling COVID-19; this was mostly treated as revenue (administrative) expenditure, including provision for infrastructure such as beds and trollies, wheelchairs, medicines, sanitizers, food, etc. (Kasale 2021). The BMC spent close to US$402 million on the infrastructure necessitated by the pandemic. This included expenditure on nine jumbo centres with 15,000 beds (isolation beds, oxygen supply, ICU and ventilator beds). While the state's expenditure on health is relatively low, the BMC allocates around 13 per cent of its budget to health.

6   Despair and precarity: socio-economic implications and the welfare arm of the state

The death and despair caused by the pandemic demanded special care and protection from the state. The relationship between state and citizens was put to the test during the crisis. By responding with welfare, security, and social protection, the state exhibited its capacity and legitimacy. The Maharashtra government announced that fixed deposits of INR500,000 (US$6,695) would be made for children who had lost one or both parents to COVID-19. These children would be provided with a monthly allowance of INR1,125 (US$15) (Press Trust of India 2021). Under this scheme, any child (up to the age of 18) whose parents died due to COVID-19 after 1 March 2020, or who had one parent that died of COVID-19 and another that died for any other reason, would be entitled to this allowance (Press Trust of India 2021). To assist widows from rural areas and deprived backgrounds, 'Mission Vatsalya' was launched to bring together 18 welfare schemes. Another set of data provided by the Women and Child Development department shows that 13,540 fathers and 1,763 mothers died due to COVID-19 in Maharashtra (Chakraborty

2021b). One can expect an increase in the cumulative death figure, as accurate district-level data is still being ascertained.

Moreover, by June 2020, numerous cases of child marriage had been reported by underage girls and alert villagers. The government and civil society organizations acted swiftly to stop several instances of child marriage within three months of the nationwide lockdown. The surge in cases of child marriage can be attributed to the lockdown and associated decisions. The prolonged closure of schools, and the adverse impact on financial security due to loss of wages and livelihood, drove people into uncertainty and poverty (Modak 2020). These were precipitating reasons behind child marriages and other regressive decisions by vulnerable families.

The socio-economic impact of the pandemic on the working class was unprecedented. However, a state's capacity to respond to socio-economic challenges through welfare measures depends on the quality of its data, information, and financial resources. Analysts believe that infection and death rates have been grossly underestimated, revealing states' lack of capacity. India's certified aggregate COVID-19 death toll of 0.48 million by 2021 is considered to be a case of gross under-reporting because of deficient official recognition and documentation of COVID-19 fatalities and 'misattribution to chronic diseases' (Jha et al. 2022: 1). Drawing on government data sources, researchers have found that all-cause mortality was roughly 27 per cent higher in 200,000 health facilities, and civil registered deaths were roughly 26 per cent higher in ten states, compared with the pre-pandemic period (Jha et al. 2022). The same study further found that COVID-19 accounted for 29 per cent of deaths between June 2020 and July 2021, i.e. 3.2 million deaths, of which roughly 2.7 million occurred between April and July 2021, when COVID doubled all-cause mortality (Jha et al. 2022). As shown in Figures 5 and 6, excess deaths recorded by the Civil Registration System in Maharashtra during the COVID-19 pandemic (from April 2020 to May 2021) were estimated at 212,589, which was 2.8 times the certified figure of 75,877 deaths for the period. Projected excess deaths during the pandemic period for 29 districts may be 2.8 to 4.1 times the number of certified COVID-19 deaths in Maharashtra. The number COVID-19 deaths for all 35 districts as of 31 May 2021 was 95,344, subsequently rising to 132,948 on 1 August 2021 (Ramani 2021). There were 22,753 excess death registrations in the first wave, i.e. between April and December 2020. This was a rise of 34 per cent above the projected estimation for those months. The surge was apparent in Mumbai, with 11,116 documented COVID-19 deaths in 2020. For every recorded COVID-19 death in 2020, Mumbai witnessed almost two excess death registrations (Banaji 2021).

Figure 5: Monthly registered deaths in Maharashtra
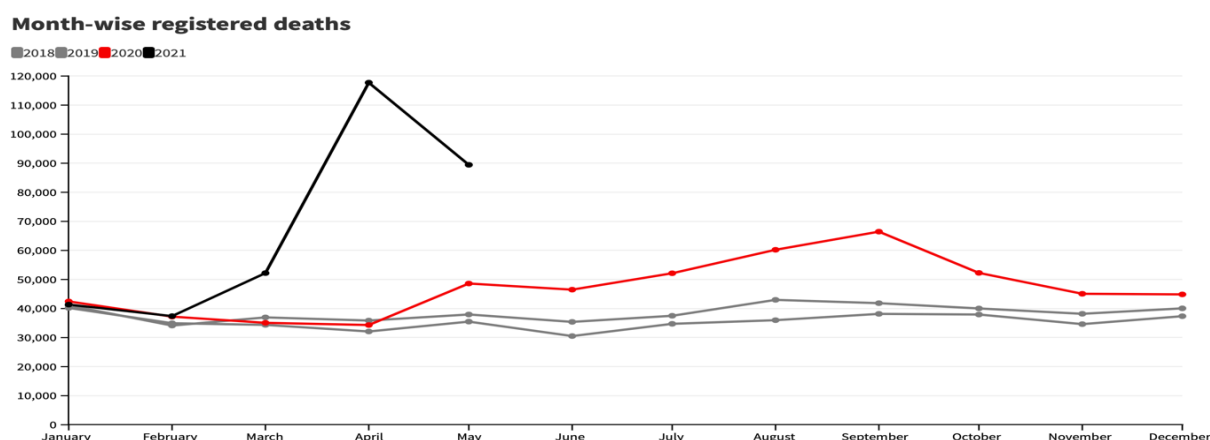
Source: Ramani (2021), reproduced with permission.

Figure 6: Excess deaths estimation

Low multiple

Excess deaths were an estimated 2.8 to 4.1 times the COVID-19 toll in Maharashtra during the pandemic period (April 2020 to May 2021)

Period ▲	Excess deaths	Adjusted excess*	COVID-19 toll	Multiple	Adjusted multiple*
2021	156556		45823	3.4	
April 2020 - December 2020	117046		49520	2.4	
April 2020 - May 2021	273602	310727	95343	2.9	4.1
April 2021 - May 2021	136465		40695	3.4	

*Estimation for 29 districts based on data availability corresponding to CRS 2019

Source: Ramani (2021), reproduced with permission.

7   Migrants, informal workers, and the urban poor: experiencing the state in the pandemic

Maharashtra has had an intriguing relationship with its migrant population. While the state and its major cities have always attracted a large number of interstate migrants, the latter have also been at the receiving end of nativist politics in the past. Furthermore, the perpetual threat of demolition and resettlement of slums and informal habitats has often placed migrants and the urban poor in an adversarial relationship with the state. With the announcement of the sudden lockdown, migrant workers found themselves in extraordinary crisis due to a sudden loss of wages that placed them at risk of penury (Sengupta and Jha 2020). They faced the twofold blow of the disease and the loss of livelihood. The predicament of struggling migrants revealed societal fault lines and showed how the pandemic aggravated prevailing inequalities (Sen 2020). The spectacle of thousands of migrants walking, carrying children and elders, cycling, and making desparate attempts to exit from the uncertainty of the cities indicated their multidimensional precarity and vulnerability. After the initial chaos, the government activated its ties with civil society organizations and capitalized on the latter's experience of working in slums and informal settlements with poor and marginalized communities. Through this association, they could promptly assess the needs and concerns of poorer communities in a localized manner. The assessment was followed by an immediate response, providing shelter, food, sanitation kits, water, and associated requirements (Duvendack and Sonne 2021).

The government announced an allocation of INR450 million (US$6,017,256) to provide food and accommodation for migrant labourers. Numerous organizations in different parts of the state networked and shared their funds and other resources to set up community kitchens, arrange dry rations, establish residential shelters, distribute equipment according to pandemic protocols, and create awareness in local languages and dialects (Das and Pardeshi n.d.). The collaboration helped to improve awareness around COVID-19 behaviour protocols, deliver services, and strengthen the information loop for government action. Feedback loops and information-sharing through social media and online platforms were effectively utilized. By the first week of April 2020, 4,653 camps were operational throughout the state, providing shelter to around 550,000 people. These camps had been set up by the administration, civil society, and cooperative groups. The district administration mostly coordinated with the labour and irrigation departments, non-governmental organizations, and cooperative sugar mills (Marpakwar 2020). The pandemic exacerbated existing resource constraints in the public health system. Hence, several non-governmental organizations

and community groups had to reimagine and remodel their mandates and strategies to respond to pandemic-induced needs and demands. They actively involved themselves in screening, contact-tracing, managing moderate cases, generating awareness, distributing essential kits, etc. In addition, the sensitive approach of the state and civil society was also discernible in quarantine and containment zones, particularly in relation to the requirements of beginning and breaking the Ramadan fast. Local authorities ensured that they provided suitable and conventional meals at religiously specified times; these efforts helped to build trust and engage with communities meaningfully.

People involved in informal-sector work—such as drivers, domestic workers, hospitality and restaurant workers, those employed in logistics, and self-employed workers in micro units—were the most severely impacted. Among domestic workers, 24 per cent lost their jobs outright, while 62 per cent lost part of their jobs, that is, they retained work with some but not all of their employers (Ganapatye 2020). Women, who constituted more than 90 per cent of the state's 1.5 million domestic workers, were the most affected. Commercial sex work was halted entirely; fear of contracting the virus made it difficult to resume work, and lack of education or transferable skills left sex workers with few options (Singh et al. 2021). During the early phase of the lockdown, the state government formed a committee to ensure food, shelter, and medical support to workers and homeless people. Approximately 8.7 million children received Food Security Act entitlements in the state between March and August 2020 (Singh et al. 2021). As COVID-19 relief measures, five kilos of food grains and one kilo of pulses per person per month were given free of cost to National Food Security Act ration cardholders under the Pradhan Mantri Garib Kalyan Anna Yojana scheme. Although this scheme was later extended to migrants, most migrants were unable to access it because they were required to provide proof of address, ration cards, and other documents that were mostly unavailable to them. Moreover, although property owners were instructed not to ask for rent from migrants and the urban poor, and employers were urged to pay their wages during lockdown, these prescriptions failed to ensure compliance, reflecting constrained state authority.

8 Tensions, confusions, and legitimacy amid political entanglements

At the peak of the second wave, the scenes of people struggling and dying due to lack of oxygen and ICU beds became a defining moment in India. Patients died on roads, in cars, in autorickshaws, in ambulances, and even in hospitals due to a shortage of oxygen. However, the crisis unfolded differently in Maharashtra. Twenty-four patients on life support at Nashik's Zakir Hussain hospital died in April due to a shortage of oxygen following a massive gas leak from a tanker (Banerjee 2021). In 2021, five major fires in the state's hospitals led to several casualties among COVID-19 patients in ICU and on COVID-19 wards. While the state managed the scarcity of oxygen, accidental mishaps caused tragic deaths. In addition, in response to the alarming oxygen crisis, a protocol on oxygen supplies to all 176 hospitals in Nasik was issued. Central government was requested to assign oxygen cylinders from Reliance Industries in nearby Jamnagar, saving several days' transport time. The administration's alacrity, and its planning and execution according to scientific advice, eased the oxygen crisis in the state. The second wave also witnessed huge demand and crisis around a trial drug, Remdesivir, which was to be supplied by the manufacturer only to licensed distributors or COVID-19 hospitals, as per the Drugs and Cosmetics Act of 1940. However, clandestine stockpiling and supply by political groups led to huge contestation and controversy. As part of patronage politics, political leaders went into action and distributed the drug to people directly. They manipulated the system and either procured the drug from the manufacturer or appropriated it from stocks allocated to the district administration (Ahsan 2021), creating a challenge for the state institution.

The Maharashtra government administered 81,005,658 doses of vaccines by 30 September 2021 (Table 4). However, the state's limited power and authority vis-à-vis vaccine procurement and administration compromised its capacity to deal with the pandemic effectively. With regard to the supply of vaccines, several states alleged that central government favoured states ruled by the National Democratic Alliance. Highlighting discriminatory treatment in the allocation of vaccines, Maharashtra's health minister complained that more doses of Covaxin and Covishield had been given to states ruled by the Bharatiya Janata Party, i.e. the leader of the National Democratic Alliance: 'Gujarat has a population of sixty million, they got 10 million doses, we have a population of 120 million, we got 14 million doses' (Bavadam 2021). Alarmed by the shortage and complexity of central government's pricing policy and the demand-supply skew, Maharashtra endeavoured to put out a global tender for 50 million doses. However, the tender met with technical glitches. The vaccine manufacturer indicated its preference to deal with central government for reasons of bilateral bureaucracy, and hence Maharashtra's efforts and capacity were constrained on technical grounds.

Table 4: Numbers of people vaccinated against COVID-19 as of 30 September 2021

State	First dose	Second dose	Total doses
Maharashtra	57,091,306	23,914,352	81,005,658
Miscellaneous	1,902,903	1,559,581	3,462,484
India	646,473,741	236,996,837	883,470,578

Note: 'miscellaneous' refers to the private procurement of imported vaccines.

Source: Government of India (2021).

Moreover, the data on vaccination points to a stark gender gap in the state. As of 18 January 2022, Mumbai had vaccinated 11 million men compared with 7,698,000 women, a ratio of 694 women for every 1,000 men. This is much lower than the city's sex ratio of 832 to 1,000. An explanation for this is the presence of a large number of single male labour migrants in the city. Moreover, of the 144.2 million vaccinations administered in Maharashtra as of 18 January 2022, the ratio is 868 women to 1,000 men, which is also lower than the state's gender ratio of 929 women to 1,000 men.

Furthermore, prolonged restrictions on the celebration of cultural and religious festivals due to pandemic protocols generated tensions between state and society. The prominent Ganpati and Dahi-Handi festivals at the pandemic's peak in 2020 posed challenges to the authority and legitimacy of the state. These festivals, which enjoy high community participation, are rooted in the social and religious history of the state and celebrated with great zeal. Despite attempts to inflame religious sentiment, the state managed to keep the celebrations muted. It also kept places of worship closed for the most extended duration in the country, and it restricted congregation. As the state's chief minister represented a subnationalist political party with a right-wing religious affiliation, dealing with complex religious situations during the pandemic was like walking a tightrope. To ease the apprehension and political pressure, the chief minister made a public statement: 'We can celebrate festivals later. Let us prioritize the lives and health of our citizens' (Print 2021). Prudent decisions were made and implemented with subtlety. Even when places of worship were reopening in most other parts of the country, the state's leadership convinced people of the need for delay before opening up religious sites and continued the restrictions on festivals, thereby demonstrating its legitimacy.

Moreover, state officials and the cadre of coalition partners tried to deal with the infodemic at the grassroots level. Through their connections with the rural population and urban formal and informal settlements, the youth cadre of Shiv Sena, who were otherwise trained to assert their subnationalist claims and Hindu religious agenda, were mobilized to provide official messaging

and community awareness about the virus and vaccines. Realizing their responsibility as members of the ruling party, the cadre were activated to collaborate with government agencies, civil society organizations, and other community groups for relief distribution, case identification, and contact-tracing. Although analysts were apprehensive about the 'coalition of extremes'—i.e. of Shiv Sena with the Nationalist Congress Party and Indian National Congress, usually their political adversaries—the changed political situation pushed the cadre to forge alliances and networks to support COVID-19 response efforts.

9   Conclusion

This paper has engaged with the curious case of Maharashtra, which was high in its vulnerability due to the socio-economic and spatial-demographic context and low in its capacity vis-à-vis the health infrastructure and political legitimacy at the time of the pandemic outbreak. I have demonstrated that despite the state's high positivity and death rates, the *post facto* assessment of the two waves of 2020 and 2021 is characterized by an acknowledgement and appreciation of the state's handling of the situation. While state capacity is understood as possession of the resources and administrative capabilities to execute necessary functions and maintain legitimacy, this paper has exposed the limitations of Maharashtra's capacity and resources in the context of the compromised federal structure. The post-liberalization era had gradually weakened the public health infrastructure and replaced it with high-cost private facilities. Limited infrastructural capabilities restrict the legitimate powers of state actors to penetrate and transform economies and societies (Mann 1984). However, a reliance on rational bureaucracy and scientific advice helped Maharashtra to develop effective administrative models and expand the health infrastructure, make crucial medical arrangements, and respond to the socio-economic crisis. The state authorities largely avoided the temptation to deny the harsh pandemic realities or obfuscate the data, instead relying on technical knowledge. Despite the deeply divided political climate, the administrative state apparatus exhibited a sense of purpose and responsibility. The state showed immense maturity in giving full autonomy to the bureaucracy and the scientific team, and in putting the right persons in critical positions.

While the limitations were evident and stark, one realizes what a subnational government can do to respond to its constituency's needs. While the central government suspended the Members of Parliament Local Area Development Scheme during the pandemic, the state of Maharashtra ensured extra allocation and flexibility in elected representatives' utilization of Member of Legislative Assembly Area Development Schemes. In an atmosphere of political rivalry and competitiveness, the state response was layered and complex—it needed negotiation, persuasion, and assertion. The case of Maharashtra underscores the importance of decentralized planning and execution. It also demonstrates the value of collaborative federalism and the wisdom of subnational leaders and administrators. For the state, the message is to invest in public health infrastructures and deepen democratic decentralization in municipalities, wards, and village councils. These endeavours will augment the capacity, legitimacy, and authority of the state in the long run, leading to better governance in normal situations as well as in crisis contexts.

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