How India Coped with the Second Wave of COVID-19

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Edited by

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Dedicated to

The people who lost their lives in the COVID-19 second wave

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Antara Choudhury, Bengaluru, India
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PREFACE

As the first wave of the COVID-19 pandemic subsided considerably in India, by January 2021, a general positive feeling arose all over the country; this feeling had a slight hint of arrogance, people felt they had risen victorious from the onslaught of the virus and were confident they had made it through the bad patch with little damage. The country was eager to move ahead and return to the normalcy of the pre-COVID days. Unfortunately, this also led to an overall laxity in the ongoing preparation to tackle the pandemic and general carelessness in the population hastening the second wave and leaving the country even more vulnerable than it was at the time of the first wave.

In hindsight, several reasons have been suggested for the surge of the COVID-19 second wave in India: the mutation of the virus into more virulent strains, overpopulation, poor coordination among different bodies for better containment, people letting down their guard, and holding several events with huge congregations. Many of these reasons were very specific to India. The country went through a very rough patch especially in the months of April and May 2021, when the spread of the virus was at its peak in India. During this time, the onslaught of the virus led to the normalisation of unprecedented practices and to confusion, chaos, and indecision in every field, which was caused not only by incompetence, lethargy, and bad intentions but also by the suddenness and ferociousness of the second wave. There were no readymade templates available, and no protocols to be followed. Society had to rely a lot on common sense and creative strategies as each sector dealt with the impact of the pandemic in its own specific way.

On the medical front, during the second wave, the country had to struggle with the greater vulnerability of its younger population. Whereas in the first wave more of those struck down among the population were older than sixty, in the second wave there were more fatalities among the younger population, causing immense suffering. In many cases the condition of patients who were recovering suddenly deteriorated and they lost their lives. Mucormycosis, a type of black fungus, attacked such a large number of COVID patients that it was also considered to be an epidemic in itself. No specific scientific reasons could be cited for this phenomenon.

The highly infectious nature of the new variants in the second wave resulted in a disproportionately high percentage of the population being

infected. As per the annual report of the Ministry of Health and Family Welfare for 2020–21, by December 2020 the number of hospital beds in India was more than 1.5 million. But with four hundred thousand new cases occurring each day by 30 April 2021, the number of beds was too few. Alongside this, the consequent shortage of medical equipment, medicines, oxygen, and medical staff became more and more acute. While patients lay prone with infection and no treatment seemed to be within reach, the country saw the best and the worst of the situation. Many organisations, celebrities, civil societies, and common people rose up to the occasion to help, support, and facilitate their fellow compatriots in need with their time, money, and efforts. The country saw the unprecedented rise of the citizen volunteer where Indians of all ages, irrespective of their economic or social background, contributed in several big and small, traditional and creative ways to help the situation. On the other hand, black marketing, illegal hoarding, and attempts to reap benefits from the misfortune of others were also rampant.

The large number of deaths caused a shortage in other facilities, such as spaces in which to conduct the last rites, crematoriums, and graveyards, and led to even more trauma being caused by the inability of hundreds of families to physically perform the last rites for their loved ones.

In this time of medical crisis, it soon became clear that the medical fraternity did not have all the answers. Research was being done, but authentic data was yet to be recorded and scientific literature was not available. Many Indian families turned to the traditional Ayurvedic remedies comprising natural and herbal cures. It was believed that these prescriptions were immune boosters and would keep the virus at bay. A fierce debate ensued between proponents of traditional and modern medicine, adding more confusion to the chaos.

While during the milder first wave, the lockdown in the country was centrally enforced and was very stringent, in the second wave, the decision to enforce lockdowns was left to the states. It was through the lockdowns that the impact of the pandemic became manifold—disrupting normal life, stalling economic activities, and affecting all sectors of society. The economy of the country which was limping back to normalcy halted once again: supply chain disruption, low demand, and labour shortage were immediately reflected as indicators of the slump.

April to June are the examination months in India when year-end examinations, board examinations, and competitive examinations take place. The education system from school to the higher education sectors, already compromised through the shutting down of institutions, the non-availability of digital devices for a large percentage of students, and network

issues, was further extended into online mode. The school board examination of the tenth and twelfth classes of central and state boards were cancelled and further admissions were delayed until the end of the year causing much anxiety and inconvenience to a large number of students at an important juncture of their lives. Research and academic activities in higher education were disrupted and rolled over to the next year to resume.

The courts, which had strictly followed the traditional way of dispensing justice, too had to shift to the digital mode. The honourable judges, advocates, court functionaries, and general public all had to adapt themselves to the new mode of online courts. Performing arts, theatre, films, and film shoots were sectors that took a long time to return to normalcy because of the very nature of their workings and the obligatory requirement of an audience.

Though the whole population was impacted by the adverse effects of COVID-19, children were the worst affected. Being cooped up in their homes, all children lost significant years of their childhood, precious opportunities to socialise, play, and develop new skills, and many of them contracted the disease and went through difficult times. Many children lost one or both their parents and became COVID orphans, thus suffering irreparable loss due to the pandemic.

For children and adults alike, during the second wave, the extended lockdown, loss of livelihood, disruption of normalcy, death and disease, uncertainty, and negativity also triggered stress and anxiety, leading to a severe breakdown of mental health. With all the focus on COVID patients, non-COVID care, such as the mental health service, was seriously affected. Enhanced incidents of domestic violence, suicide, nervous breakdowns, and so on were recorded during the second wave.

The year 2021 was also the year of the Kumbh Mela religious festival, which took place in Haridwar in the state of Uttarakhand, and of elections in several states; both were events in which huge congregations—thronging political rallies and jostling crowds—further exacerbated the pandemic because precautionary measures could not be enforced. However, the fear of death and disease could not deter devotees from following the traditional rituals thus exponentially spreading the infection cycle.

It was only on 25 August 2021 that Soumya Swaminathan finally said that India "may be entering some kind of stage of endemicity where there is low-level transmission or moderate level transmission going on but nothing as severe as before, in other words, India is learning to live with the virus." The second wave of COVID-19 in India is a story of the five months from April to August 2021, which shook the country and tested the strength

of each sector, exposing the fault lines and challenging the resilience of the communities.

As the COVID-19 second wave receded, we, the people, civil society members, editors, and authors of this book, having a lived experience of these trying times, found ourselves becoming historical witnesses of its disruptive impact on normal lives. People working in the sectors of health care, education, the judiciary, business, industry, media, social work, films, and theatres, dealt directly with the unforeseen challenges and became the possessors of first-hand knowledge of the pandemic. The book contains an undiluted account of these primary sources that we collated and combined to capture a snapshot of the time as it impacted lives and livelihoods; the writings preserve the first impressions and fresh experiences of the experts as seen from a ringside view. The write-ups are based on the personal experiences and observations of the authors in professional workplaces. These are then brought into sharper focus by triangulating and substantiating them with evidence from media reports, research publications, or government sources. The methodology of writing these papers is closer to the method of phenomenology.

We find images of two extremes as we peruse the literature on what has been written on how India coped with the COVID-19 second wave situation. While, on the one hand, the resilience of the people of India, the efficiency in vaccinating the population and containing the virus better than even some developed countries is appreciated, on the other hand, the country's inability to provide health care at the time of the peak of the pandemic, its huge religious and political gatherings, and its inefficient COVID-related data collation have been bitterly criticised. Our efforts in this book have been to report the incidents without commenting on or analysing the scenario; in this way the chapters are predominately reports from the field rather than research papers based on an authentic literature survey, which in the case of the COVID-19 second wave is still unavailable in the public domain. Our justification for taking this stance is that it is too early to objectively research COVID-19 and its impact on society as we need an adequate temporal distance. Therefore, the honest way to capture the essence of the times is to record the happenings authentically, which this book tries to do. The book provides the reader with a quick glimpse into the lived history of specific areas as well as an overall picture. We believe that with time, the book will become more valuable for its authentic ground reporting of the events that unfolded during the second wave. It can become the starting point for research and provide takeaways for useful practices in different sectors.

The second wave of COVID-19 will forever be compared and contrasted with the first wave of the viral onslaught. While the first wave caught the country unawares and invoked feelings of grit and determination to give a good fight and sentiments of nationalism akin to a warlike situation, the second wave was marked by sheer exhaustion and feelings of helplessness, despondency, vulnerability, and anger towards the government and administration for frustrating efforts in containing the spread of the pandemic. This documentation focuses specifically on second-wave issues, which were markedly different from the first wave. It aims to give the reader an objective understanding of the background, nuances, and complexities of the times from an insider viewpoint. The contributors belong to the states of Karnataka, West Bengal, Gujarat, Assam, Punjab, Haryana, and Kerala, and the Union Territory of Chandigarh, from all cardinal directions of the country. They include bureaucrats, academicians, lawyers, doctors, film and advertising professionals, and people from different backgrounds thus bringing diverse perspectives to the stories.

It needs to be reiterated that though leaders of political and executive bodies in India have led the country out of the COVID waves, it was the grit and resilience of all civil society members—each citizen of the nation—that helped India cope with the second wave's spiralling cases and its fatal consequences. This book thus collates stories of the human spirit, told by the people who were present in the field, day in and day out. These specific lived experiences have been distilled into writings that become a representation of the whole society by comparing, analysing, reflecting, and triangulating, with evidence from other authentic sources. The writings thus move from the personal to the universal and are a balanced mix of objective and subjective approaches.

We sincerely wish that the book contains in itself the seeds of a greater understanding of what a formidable challenge our country encountered in the form of the COVID-19 second wave and how we coped with it using whatever resources we had and all the might we had.

The Editors
Antara Choudhury, Bengaluru, India
Jayanti Dutta, Chandigarh, India
30 April 2022

ABBREVIATIONS

1	ACMA	Automotive Component Manufacturers Association
2	AR	augmented reality
3	AYUSH	Ayurveda, Yoga and naturopathy, Unani, Siddha, and Homeopathy
4	BCG vaccine	Bacillus Calmette–Guerin vaccine
5	BMD	bone mineral density
6	BMWM	biomedical waste management
7	CBWTF	common biomedical waste treatment and disposal facility
8	CCTV	closed-circuit television
9	CDC	Centre for Disease Control
10	CDSCO	Central Drugs Standard Control Organization
11	CEA	chief economic advisor
12	CEPI	Coalition for Epidemic Preparedness Innovations
13	COVID	Coronavirus disease
14	CPCB	Central Pollution Control Board
15	DLMS	digital learning management systems
16	ECMO	extracorporeal membrane oxygenation

17	FICCI	Federation of Indian Chambers of Commerce and Industry
18	GDP	gross domestic product
19	Generation Z	members of generation aged between 10–25
20	GST	goods and services tax
21	HCW	health care workers
22	HE	higher education
23	HFNC	high-flow nasal cannula
24	HRDC	Human Resource Development Centre
25	ICMSV	Indian Classical Music Society of Vancouver
26	ICT	information and communications technology
27	ICU	intensive care unit
28	IGCP	International Geoscience Programme
29	IIP	index for industrial production
30	IMA	Indian Medical Association
31	INSACOG	Indian SARS-CoV-2 Consortium on Genomics
32	IoT	internet of things
33	IPD	inpatient department
34	IUGS	International Union of Geological Sciences
35	JEE	joint entrance examination
36	MOOC	massive open online course

37	NAQI	National Air Quality Index
38	NCRB	National Crime Records Bureau
39	NDLI	National Digital Library of India
40	NIMHANS	National Institute of Mental Health and Neuro-Sciences
41	NEET	National Eligibility cum Entrance Test
42	NGO	non-governmental organisation
43	OPD	outpatient department
44	OTT	over-the-top
45	PLI	production-linked incentive
46	PM	particulate matter
47	PMI	purchasing managers index
48	PPE	personal protective equipment
49	PSA	pressure swing adsorption
50	PSU	public sector undertaking
51	PTSD	post-traumatic stress disorder
52	QTc	corrected QT interval
53	R&D	research and development
54	RT-PCR	reverse transcription polymerase chain reaction
55	SARS	Severe Acute Respiratory Syndrome
56	SARS-CoV-2	SARS Coronavirus 2

57	SDG	sustainable development goals
58	SIAM	Society of Indian Automobile Manufacturers
59	SII	Serum Institute of India
60	SOP	standard operating procedures
61	SOS	save our souls
62	SWAN	Stranded Workers Action Network
63	TPD	tonnes per day
64	TRP	target rating point
65	TV	television
66	UAE	United Arab Emirates
67	UGC	University Grants Commission
68	UK	United Kingdom
69	UNESCO	United Nations Educational, Scientific and Cultural Organization
70	UNICEF	United Nations International Children's Emergency Fund
71	US	United States
72	VCCC	voluntary criminal case conferencing process
73	VOC	variant of concern
74	VOI	variant of interest
75	WHO	World Health Organization

CHAPTER 1

THE MUTATING VIRUS: THE INDIAN SCENARIO

A. R. MAHESH

Abstract

The second wave of COVID-19, which hit India in the last week of April and the first week of May 2021, was catastrophic. It is necessary to know whether the advent of the second wave was triggered by the existing SARS-CoV-2 strains or any new variants. The monthly distribution of SARS-CoV-2 genomic sequence data from India was checked and compared with epidemiological data for new cases and deaths for the second wave's comparable period. According to the findings, the first signs of the second wave's arrival were visible in January 2021, and it was predictable by March–April 2021 due to the variant of the B.1.617 lineage.

Keywords: SARS-CoV-2, B.1.617, Second wave, Virus variants

> The mutated Covid virus will never really go away.
> —A.Velumani, founder, Thyrocare Technologies

COVID-19 unleashed a devastating second wave in India, which began at the end of February 2021 and peaked at the end of April and the beginning of May 2021. The country's epidemic response system and health infrastructure were shattered when the second COVID-19 wave arrived without warning, causing an exponential increase in infections ("Tracking SARS-CoV-2 Variants" n.d.; Kumar et al. 2021). This resulted in a great deal of suffering and death, which could have been avoided if timely forecasts had been available.

The double mutant

In October 2020, the B.1.617 variety was identified in India; it later gave rise to three sub-lineages, B.1.617.1–3. The indigenous variant was reported in February 2021 by Rajesh Karyekarte's group at BJ Medical College, Pune, in a small number of samples from Amravati, Maharashtra. The Indian Council of Medical Research's National Institute of Virology in Pune and the Indian SARS-CoV-2 Genomic Consortia (INSACOG) confirmed this as a potential variant of concern (VOC), as did the National Centre for Disease Control, Delhi, in March 2021 after studying a large number of datasets from different districts and longer periods (Cherian et al. 2021).

Sequencing B.1.617 revealed that it was a double mutant having mutations L452R and E484Q and was the first viral lineage to combine the two mutations. The mutation L452R increased viral transmission by 20% and reduced antibody efficiency by more than 50%. These mutations were in key spike protein areas important in host contacts and neutralisation induction ("Website," n.d.). India's high population and population density have been considered a perfect incubator for this virus to experiment with mutation (Biswas 2021). The variant was acknowledged by the Indian Health Ministry by the end of March 2021 but still not stamped as a VOC. Soon apprehensions started to rise that this variant could escape prior immunity thus negating the benefits of long lockdowns, vaccination campaigns, and containment efforts. By April 2021, the surge in Indian infections was attributed to this new and more virulent variant. Of the 408 detected sequences of B.1.617, 265 were found in India. In Maharashtra, 60% of cases were found to be infected by this variant and it had spread to ten states of the country. Consequently, some countries suspended the arrival of Indian residents.

Until December 2020, B.1.1.7 (i.e., the alpha variant), was the most common strain observed in the Indian population before the second wave of immigrants arrived (Liu et al. 2021). A rising lineage of SARS-CoV-2 variants B.1.617, particularly its sub-lineage B.1.617.2 also called the delta variant, was thought to have triggered the second wave in India. The World Health Organization categorised the B.1.617 lineage as a worldwide VOC in August 2021. According to the WHO update in mid-July 2021, B.1.617.1 (also known as the kappa variant) was a variant of interest (VOI), whereas B.1.617.2 replaced B.1.617 as a variant of concern (VOC). Evidence suggested that B.1.617 lineage alterations were more transmissible and perhaps more deadly than the alpha variant. According to a study, antibodies obtained from natural infections, and available after COVID-19 vaccines, revealed a significant reduction in neutralisation

against B.1.617 lineage variants. Out of these, B.1.617.2 was not only the fastest-spreading SARS-CoV-2 strain in India but was also found to have higher transmissibility and immune escape than other SARS-CoV-2 strains (Wang et al. 2021; McCallum et al. 2021).

In just a few weeks, B.1.617 became the dominant strain in India. The lineage subsequently evoked global interest as its variants were also found in Australia, Belgium, Germany, Ireland, Namibia, New Zealand, Singapore, the United Kingdom, and the United States ("Why India Must Tackle a Mutating Virus Head-On" n.d.) in addition to India.

The prediction of the second wave

It was noted that by January 2021, the first signs of the second wave's arrival were readily visible, with the increase of the B.1.617 lineage surpassing all VOCs and VOIs. Furthermore, the wave was anticipated by March 2021, when B.1.617.2 began to climb sharply in tandem with a corresponding spike in monthly new cases and deaths. A preprint report published in July 2021 by a group of scientists affiliated with the Indian SARS-CoV-2 Genomic Consortia (INSACOG) detected a similar pattern in the increase of the B.1.617 lineage, mainly the B.1.617.2 variant in Delhi, before the second wave backed up the findings. The researchers also discovered that this variety was up to 50% more transmissible than B.1.1.7 and that it predominated in the samples (76%) evaluated from vaccination outbreak illnesses in Delhi. However, some flaws in the research influenced how the results were interpreted. The samples employed in the analysis were not representative of people in numerous disproportioned geographic locations. As a result, the genomic sequence data presented did not accurately reflect the epidemiological scale of the variants' spread in the reported geographical regions but rather showed their relative proportion in the samples for which genomic sequences were uploaded to the Global Initiative in Sharing all Influenza Data, the GISAID database ("GISAID-India" n.d.). Later, inconsistency in the reporting and uploading of genomic sequences was detected, preventing researchers from evaluating a daily trend in the distribution of variations. Thus, a proper analysis of the variation of dominance was challenging due to a lack of genomic sequences and inconsistencies in their uploading to databases for various states and union territories of India (Saikia 2021; Deng et al. 2021).

The driver of the second wave

Evaluation of two types of secondary data sets was done to see whether the second wave was predictable and whether it was triggered by an existing SARS-CoV-2 lineage or a single or group of evolving mutations. To begin with, the EpiCoV^{TM} database of the GISAID's monthly distribution of SARS-CoV-2 genomic sequence data from India was looked into (Saikia 2021). It was also analysed with the epidemiological data from Worldometer for new cases and deaths from COVID-19 from 1 December 2020 to 31 August 2021. It was confirmed with 10,115 SARS-CoV-2 genomes reported in total ("India COVID—Coronavirus Statistics—Worldometer" n.d.). The emergence of the second COVID-19 wave in India was seen in the data trends, with clear signs that SARS-CoV-2 strains would have spiked it. It was found that the variants circulating in India have multiple origins rather than having evolved from a single variant. Eight SARS-CoV-2 Pango lineages and their various sub-lineages were circulating in the Indian population by December 2020, including four VOCs (B.1.1.7, B.1.351, P1, and B.1.617.2) and three VOIs (B.1.617.1, B.1.127/B.1.429, and B.1.525) (Deng et al. 2021; Volz et al. 2021). However, B.1.1.7 was the most common mutation observed in the bulk of Indian genomic sequences contributed to the GISAID database. Since their inception, B.1.617 lineage variations (B.1.617+) showed an increasing upward tendency, surpassing other VOCs such as B.1.1.7 by January 2021, and continuing to rise until the end of April. By March 2021, however, B.1.1.7 had begun to show a negative trend. This showed that B.1.617 lineage variations would be the prevalent variant in the future, since they were found in 67% of SARS-CoV-2 sequences submitted to GISAID by April 2021. Between December 2020 and April 2021, the growth of the B.1.617 lineage followed a closely matched trend with epidemiological data of new cases and fatalities. This was not perceived with any other variant, implying that this lineage was the main driver of the rising second wave, which peaked during the last week of April and the second week of May 2021, as evidenced by the daily trend of new cases and deaths (Collier et al. 2021).

Prevalence in geographical areas

The genomic sequencing data was investigated separately from the states and union territories to see whether the rise in B.1.617 lineage variations was restricted to certain geographical regions, which could have altered the overall data trends. With fewer exceptions, a similar increase in the

identification of B.1.617 lineage variations was observed in the majority of India's states and union territories for which genomic data was available. However, in Kerala and Punjab, B.1.1.7 was still a dominant variant, and in remote states and union territories, such as Ladakh and the Andaman-Nicobar group of islands, a previously dominant variant (B.1 lineage) was still prevalent by December 2020. Only a few genomic sequences had been uploaded from these locations during the period, and completely different patterns were visible in these reports (Volz et al. 2021).

The intra-lineage competition was observed amongst the B.1.617 sub-lineages. The solitary B.1.617 sample reported on 25 February 2021 (date of collection) (EPI-ISL 1544002) has not been found since. B.1.617.2 was first discovered on 21 November 2020 (EPI ISL 2373501), then B.1.617.1 was discovered on 1 December 2020 (EPI ISL 1372093), and B.1.617.3 was discovered on 14 December 2021 (EPI ISL 2099648). Since the first case, B.1.617.2 has been discovered in a substantially higher number of samples than B.1.617.3. By March 2021, B.1.617.1 had declined, but B.1.617.2 had risen sharply, and by April 2021, B.1.617.2 was found singly in 50% of the SARS-CoV-2 samples from India submitted to the GISAID database ("GISAID-India" n.d.).

Learnings for the future

On the basis of the outcomes of the data acquired, it is believed that genetic surveillance of variations combined with epidemiological data can be a useful method for forecasting impending COVID-19 waves before they occur.

However, the accuracy of the prediction was heavily reliant on population-matched viral genome sequencing and consistency in data uploading from all geographical locations, which appears to be a major impediment to timely predictions at the moment.

It was realised that as a precautionary measure, vaccines must be available, affordable, and accessible around the world and the emergence of new variants should be considered implicit in the coping strategies. This pandemic served as a reminder to high-income countries that infectious diseases have a significant impact on economies and lives, and that developing and implementing effective vaccines against these diseases should continue to be a top priority worldwide. It was also realised that on the difficult path to curb the pandemic, global cooperation to promote equity and responsiveness to local circumstances is vital.

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CHAPTER 2

FIGHTING FATIGUE: HOW MEDICAL FORCES COPED

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Abstract

The medical task force was the one sector that not only was on the frontline but also had to work in a warlike situation as the outbreak of COVID-19 and its incessant waves kept it on high alert. The situation in hospitals during the second wave was extremely depressing with a large number of infections and fatalities as well as an acute shortage of health care workers and medical supplies. All these factors affected the doctors, nurses, and hospital staff in negative ways and caused them both physical and mental fatigue. However, the health care workers must be lauded for the brave fight they put up in adverse and constrained conditions and for working with sheer grit and resilience, using simple strategies to sustain their motivation. This chapter authored by two doctors is a ringside account of survival during the toughest times of the second wave in India.

Keywords: Fatigue, Healthcare, Stress, Mental, Medicines

Introduction

Health care workers were undoubtedly the frontline workers in the war against the unprecedented outbreak of COVID-19. During the first wave of the pandemic in India, they faced unforeseen medical challenges as well as problems of ostracisation and stigma in society. While doctors, nurses, and health care workers (HCWs) were still dealing with the residual cases of the first wave, the second wave arrived with a vengeance.

During the second wave, the challenges faced by medics were different from the previous year and added to the as-yet unsolved problems of the first wave. The second wave in India was marked by an exponential increase in the number of patients, a very high death rate, and shortages of hospital beds, equipment, oxygen cylinders, medicines, and so on. The lingering impacts of long COVID, post-COVID complications, and black fungus further complicated the situation and put tremendous pressure on HCWs at all levels of medical intervention, including physicians, nurses, ward staff, and other hospital employees. For HCWs, the overload of hospital duties was continuing for the second year in a row and it was obvious that the COVID-19 second wave would have grave physical, psychological, and social implications for them.

As per WHO data in the year 2019, India had 9.28 doctors and 23.9 nurse/midwifery personnel per 10,000 individuals (Lai et al. 2020), whereas the ideal requirement was 44.5 health care workers (doctors and nurses) per 10,000 individuals ("Website," n.d.). Health care workers in India were already operating with almost half the required numbers. This acute shortage was in itself a constraint in delivering quality health care to the population and this dearth of medical human resources presaged disaster in the chaotic crisis of the pandemic. While the infrastructure could be augmented and the medicine and equipment shortage could be managed, it was impossible to increase the number of HCWs in such a short period to cope with the requirements that grew by the day.

As the COVID-19 pandemic unfolded, it led to unprecedented working conditions in highly traumatic situations causing an adverse physical and psychological impact on HCWs. A large-scale survey of 53,000 HCWs from the Republic of China showed that approximately 35% of respondents had mild, 29% had moderate, and 5% had severe psychological distress ("Correction: A Nationwide Survey of Psychological Distress among Chinese People in the COVID-19 Epidemic: Implications and Policy Recommendations" 2020). Of HCWs, 50.3% suffered from depression and 44.6% from insomnia during the pandemic (Lai et al. 2020). Another similar study has pegged the figures as high as 54% of HCWs facing moderate to severe psychological affects, 29% having moderate to severe anxiety symptoms, and 17% having moderate to severe depressive symptoms (Wang et al. 2020). The psychological impact on HCWs of such traumatic situations resulted in fear of worthlessness, guilt, burnout, depression, nightmares, anxiety, post-traumatic stress disorder, and substance abuse ("Psychosocial Impact of COVID-19" 2020). Though parallel studies in India are unavailable, qualitative accounts such as numerous tweets, blogs, and anecdotal evidence help put together the extreme mental and

physical fatigue that the Indian medical task force encountered, thus validating the reports in the literature. This impact of COVID duty on HCWs that generated fatigue can be categorised as:

Physical issues
- Long duty hours
- Practising new protocols without adequate training
- Working in COVID-19 protective gear

Psychological issues
- Fear of the risk of exposure and of carrying the infection to one's own family
- The emotional stress of working in traumatic conditions

Social issues
- Misbehaviour by patients' kin
- Ostracisation by society
- Adverse labelling and stigma

Long duty hours and overwork

"Local administration and doctors who are fighting the outbreak at the moment are overworked. . . . Doctors, health care workers, and frontline workers reported burnout and stress in 2020 due to the pandemic and they did not have any respite as the second wave hit the country" (Buzz Staff 2021) cited a report in April 2021; however, the worst was yet to come.

"I don't know about other people but I am physically and mentally exhausted with crazy shifts and calling more deaths than I did in all my years in service combined," reads a tweet by Deepshikha Ghosh, a doctor in critical care. This tweet went viral and hundreds of doctors shared their disturbing experiences of working long hours in extremely stressful conditions. It was found that emergency and ICU staff were more vulnerable to physical fatigue than others, nurses were affected the most probably due to prolonged and persistent exposure to patients, and the emotional wellbeing of female and young HCWs was threatened ("PTSD Symptoms in Healthcare Workers Facing the Three Coronavirus Outbreaks: What Can We Expect After the COVID-19 Pandemic" 2020). The work pressure was overwhelming.

Practising new protocols without adequate training

Though the government tried to provide more workers by allowing medical and pharmaceutical students to serve as HCWs, training them in the