

Impact of COVID -19 Pandemic on Medical Healthcare Workers in Mumbai City, India



Study Report Submitted to

JAPAN INTERNATIONAL COOPERATION AGENCY
INDIA OFFICE

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Abbreviations

ANM	Auxiliary nurse midwife
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy
ASHA	Accredited Social Health Activist
BCG	Bacillus Calmette Guerin
BMC	Brihanmumbai Municipal Corporation
CVD	Cardio Vascular Disease
COVID	Corona Virus Disease
DOTS	Directly Observed Treatment Short-course
DPT	Diphtheria Pertussis and Tetanus
FLW	Front Line Worker
HBNC	Home based New-born Care
HMIS	Health Management Information System
HR	Human Resources
ICU	Intensive Care Units
JICA	Japan International Cooperation Agency
MCGM	Municipal Corporation of Greater Mumbai
MCH	Maternal and Child Health
MHW	Medical Health Workers
NIMHANS	National Institute of Mental Health and Neurosciences
NGO	Non-Governmental Organisation
OPD	Out-Patient Department
PPE	Personal Protective Equipment
PHC	Primary Health Centre
PTSD	Post-Traumatic Stress Disorder
RT-PCR	Real-time reverse transcriptase-polymerase chain reaction
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
WHO	World Health Organisation



Executive Summary

The spread of the novel coronavirus disease (COVID-19) since its inception in December 2019 has led to devastating loss of lives, as well as economic and social impacts. Amidst the challenges posed by this, the backbone of management and control of the burden of death and disease has been led by Medical Health Workers (MHWs). MHWs have carried a heavy burden both mentally and physically while dealing with pandemic, especially during the peak waves. Previous pandemic experiences have highlighted that those on the frontline are at a high risk of infection, psychological distress, and physical burnout. Contributing factors include an increasing burden of confirmed and suspected cases, overwhelming workload, resource constraints including manpower and supplies, widespread media coverage, and feelings of being inadequately supported.

All the above points towards a need to address pandemic concerns about the mental health, psychological adjustment, and recovery of health care workers treating and caring for patients with COVID-19. This report aims to shine light on the impact of continuous working on the frontlines on MHWs, and to provide recommendations to alleviate this burden. While there exist certain resources to help mitigate the effects, interventions which are taken up by MHWs are low.

This report highlights evidence pointing to overburdening of MHWs as well as resource constraints during the pandemic in Mumbai city. The analysis of secondary data provides a context of sheer overwhelming number of cases, constrained bed availability and disruption of routine healthcare services. A drop is seen in delivery of routine and essential health services and subsequent efforts in resuming them. The scoping review further highlights how the pandemic has led to elevated levels of anxiety, stress, depression, and burnout among MHWs, especially in the context of India during the COVID-19 pandemic. Apart from mental burden, it brings to notice the physical aftereffects due to COVID-19, stemming directly from the spread of the diseases, as well as due to the working conditions. It defines the linkage of how the physical toll of working in such a situation further aggravates the psychological burden. Evidence from government and private mitigation measure put in place for MHWs highlight a heavier focus on the availability of online counselling services set in place for mental health, and the provision of a small compensatory pay to MHWs from government facilities.

The primary data continues to explain the story line echoing the disruption of services. The qualitative findings supplemented by the scoping review go onto explaining how the pandemic has led to elevated levels of, stress, fear, anxiety, and burnout among MHWs, especially in the context of India during the COVID-19 pandemic. In our study, depression was not noted among MHWs, but given the lack of availability of structured psychosocial support at a facility level as well as increased workload leading to severe fatigue, a nuanced difference may not be perceived at a respondent level. The two study arm findings also converge with the self-administered questionnaire results to provide robust results on the physical impact due to COVID-19, including physical burnout and fatigue, physical symptoms such as dehydration, weight loss, suffocation, rash eruptions stemming from increased work hours and usage of PPE kits. The qualitative findings on the economic impact of Covid 19 differ from secondary review, with only one instance of a cut in salary. A large social impact is seen, wherein having to isolate from friends and family because of fear of infection as well as workload has led to increased frustration and loneliness. Incidences of violence were not noticed, though a few cases of discrimination were highlighted. Mistreatment by patients' families was attributed to high stress levels and anxiety.

The perceived solutions put forth by MHWs include the need of facility level mental health interventions, open communication with leadership for enhanced problem solving, incentives (including, certificates,

compensation) to enhance motivation, and facility strengthening in terms of both human resources and supplies to decrease the workload.

The scoping review also brought forth recommendations directly affecting MHWs. Many studies echoed suggestions emerging from the primary data with a large focus on organisation specific organizational strategies to improve wellness for healthcare providers in a holistic manner. To ensure smooth transition of MHWs from different divisions/specialties towards emergency response situations, capacity building across all cadres for emergency preparedness should be instilled.

At a health system level, strengthening of disease surveillance mechanisms and health information infrastructures to have a strong real time data analytics in health surveillance is needed. Digital triaging may be utilised as a more resource sensitive method to reduce exposure of MHWs to newer viral diseases.



Key Messages

Impact on Health Services at facilities



There has been a decline in Maternal and Child Health outcomes due to disruption in service delivery during the lockdown. Pregnancy registration, antenatal care check-ups, HBNC, and immunization significantly reduced during the lockdown period due to the suspension of outreach services as per government guidelines. However, post resumption, the uptake increased with restart of outreach services.

Frontline workers and other healthcare workers were diverted towards COVID-19 testing, tracing and management. Due to this many immunization sessions were held without the presence of Community Frontline Workers. Further, risk of COVID coupled with slow revival of outreach services led to poor attendance of beneficiaries during child immunization sessions. Disruption in routine services was gleaned through primary data due to doctors being rerouted to Covid care as well.

Uptake of outpatient services has been slow as the increasing fear of COVID-19 has hindered access to health facilities. There has been a decline in service utilization of Outpatient services for Tuberculosis, hypertension, diabetes, and acute heart disease.

Impact on Physical health of MHWs

Stress on the health system has severely impact MHWs physically. Working conditions of MHWs, demands of the job, and susceptibility to infection has resulted in insomnia, lethargy, loss of appetite etc. Psychological distress and physical stress have been positively associated. Primary data highlights increased instance of fatigue, exhaustion and burnout, stemming from increased workload and the use of PPE kits. PPE kit usage further led to suffocation, dehydration, and skin conditions.



Mental Health impact on MHWs

Scoping review highlighted working during the pandemic has causing elevated levels of anxiety, burnout, depression, and stress among MHWs. The primary data echoed similar findings with elevated stress levels, anxiety, fear and mental fatigue.

Primary reasons gleaned from both primary and secondary data include long working hours, increased workload, and fear being infected and/or infecting family members. MHWs engaged in direct management of COVID-19 in ambulatory services, ICU, and isolation facilities have been most affected. Additionally, primary data highlighted dealing with difficult patients and family members, change in roles and responsibilities and resource constraints as reasons.

Working Conditions of MHWs

Facilities have established safety and infection prevention protocols as per guidelines and standard operating procedures recommended by national and sub-national authorities. Even so, qualitative data highlights resource crunches both in the form of human resources as well as supplies such as PPE kits and drugs.



Efforts include modifying infrastructure, work policies and staff allocation to minimise risk and fatigue to adapt service delivery in the new normal.

Burdening of the health system due to pandemic has stifled resources impeding service delivery for both COVID and non-COVID diseases. Working in a resource constrained environment, with inadequacy in infrastructure caused by supply-chain bottlenecks has further contributed to heightened physical and psychological stress

COVID-19 Chronology in Mumbai

March 2020

- March 11, 2020: Coronavirus declared pandemic by WHO and first case detected in Mumbai.
- March 13, 2020: Provisions of Epidemic Diseases Act, 1897 invoked in Maharashtra.
- March 17, 2020: Section 144 CrPC to prohibit the assembly of four or more people in some areas of Maharashtra.
- March 22, 2020: Janta Curfew- a 14-hour voluntary lockdown was observed across India.
- March 25, 2020: A nationwide lockdown across India is imposed till April 14, with only essential services kept out of its purview.

June -September 2020

- June 8, 2020: Phased reopening begins, with Unlock 1.0 guidelines coming into force.
- July 1, 2020: Unlock 2.0 guidelines come into force, with relaxations in night curfew, provision for more domestic flights and trains, and clearance for more than five people in a shop.
- September 18, 2020: Mumbai records 34259 active cases, highest in 2020.
- September-December 2020: New infections and active cases fall steadily in Mumbai and across India.

March-April 2021

- March 2021: New daily cases start rising exponentially across Mumbai and India.
- April 11, 2021: 91100 active cases in Mumbai, highest recorded till date.
- April 14, 2021: 15-day lockdown imposed
- April 28, 2021: Lockdown in Maharashtra extended till June 2.

April & May 2020

- April 14, 2020: Lockdown extended till May 3.
- April 21, 2020: The first jumbo Covid centre in Mumbai was inaugurated on April 21, 2020. Mumbai will open a total of six such facilities in 2020.
- May 2, 2020: Lockdown extended for two weeks starting May 4 with zone-wise restrictions; Mumbai continues with highest restrictions.
- May 17, 2020: Lockdown extended till May 31, allowing inter-state movement of passenger vehicles, buses with mutual consent of states.

December 2020- February 2021

- December 2020 -January 2021: Jumbo COVID facilities in Mumbai are downsized, few are shut.
- January 16, 2021: India begins her vaccination program against COVID-19, beginning with MHWs and at-risk elderly population.
- February 2021: Daily new cases start rising again in Mumbai and across India.
- February 23, 2021: The Union health ministry reveals that two new strains of Covid-19 have been detected in India.

May- August 2021

- June 7, 2021: Five-level plan to unlock in Maharashtra, based on weekly positivity rate and occupancy of oxygen beds in districts, comes into effect (Mumbai continues with highest restrictions).
- August 15, 2021: Mumbai local trains resume for those who are fully vaccinated.

Introduction

On 11 March 2020, WHO declared the Novel Coronavirus Disease (COVID-19) outbreak as a pandemic and reiterated the call for countries to take immediate actions and scale up response to treat, detect and reduce transmission to save people's lives. Across the globe, our healthcare systems were not designed to deal with this crisis: an unpredictable, large-scale health challenge. Globally till September 2021, there have been 226,844,344 confirmed cases of COVID-19, including 4,666,334 deaths, reported to WHO¹. The spread of COVID-19 in India was of great concern due to the country's large and densely populated areas with widespread poverty and high migration rates, coupled with a high prevalence of chronic health conditions and inadequate health infrastructure on the other hand.

The pandemic has exposed health workers and their families to unprecedented levels of risk. Medical health workers (MHWs) face the highest burden of contracting Covid, with 14-35% of COVID-19 cases reported to WHO being among health workers. In addition to physical health risks, high demand settings have placed large levels of psychological stress on health workers, working incredibly long hours, and living in constant fear of disease exposure while separated from family and facing social stigmatization². A recent systematic review and meta-analysis revealed one in four health care professionals reporting depression and anxiety during Covid-19, and one in three suffering from insomnia³. Previous studies from SARS or Ebola epidemics, have reiterated the extraordinary amounts of pressure on MHW that arise from the onset of a sudden and immediately life-threatening illness⁴. Contributing factors to the same include physical exhaustion, increased susceptibility of infection, increased workload, inadequate personal equipment, and the need to make ethically difficult decisions on the rationing of care. The resilience to these stressors can be further compromised by factors such as isolation and loss of social support, risk of infecting family or friends, stigmatization and violence, and drastic changes in the ways of working^{5,6}. All these factors contribute to increased vulnerability of MHWs towards mental and physiological health problems.

The Japan International Cooperation Agency (JICA) has signed an agreement with the Government of India towards the COVID-19 Crisis Response Support Loan for Social Protection. Under the gamut of this program, measures towards containment of Covid-19 and mitigation of its adverse socioeconomic impacts in India will be sought. The program will contribute to the achievement of SDGs Goals 1, 5, and 8, among others. Within the scope of this program, JICA envisages understanding the impact of COVID19 on the medical fraternity and recommend countermeasures to relevant stakeholders to the mitigate the impact of COVID-19 on the MHWs in both public and private sectors.

¹ <https://covid19.who.int/>

² <https://www.who.int/news/item/17-09-2020-keep-health-workers-safe-to-keep-patients-safe-who>

³ Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V. G., Papoutsis, E., & Katsaounou, P. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain, behavior, and immunity*, S0889-1591(20)30845-X

⁴ Liu X, Kakade M, Fuller CJ, Fan B, Fang Y, Kong J, Guan Z, Wu P. Depression after exposure to stressful events: lessons learned from the severe acute respiratory syndrome epidemic. *Comprehensive psychiatry*. 2012 Jan 1;53(1):15-23.

⁵ Bhatti OA, Rauf H, Aziz N, Martins RS, Khan JA. Violence against healthcare workers during the COVID-19 pandemic: a review of incidents from a lower-middle-income country. *Annals of global health*. 2021;87(1).

⁶ Wu P, Fang Y, Guan Z, Fan B, Kong J, Yao Z, Liu X, Fuller CJ, Susser E, Lu J, Hoven CW. The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. *The Canadian Journal of Psychiatry*. 2009 May;54(5):302-11.



Context

Mumbai is India's financial capital, with over 23 million people. It is densely populated with congested living conditions and a sizeable slum-dwelling population. The health services for people in Mumbai are met through hospitals and dispensaries run by the Municipal Corporation of Greater Mumbai (MCGM), Maharashtra State government and the private sector. In terms of government-run facilities, Mumbai houses 5 medical college-hospitals, one dental college-hospital, 19 general hospitals, six specialty hospitals, 29 maternity homes, 175 municipal dispensaries and 185 health posts. Additionally, the city also boasts of a multitude of privately run general and multispecialty hospitals.

Mumbai became a hotspot for infection, perhaps fuelled by the above factors as well as the presence of an international airport and sea hubs leading to high international exposure during the advent of the pandemic⁷. The spread was further driven by a lack of preparedness⁸, limited availability of preventives like facial masks⁹, and poor sanitation. Given the density of population, Mumbai's 70 public hospitals with a capacity of 20,700 and 1,500 private facilities with 20,000 beds do not suffice.

Though a country wide lockdown was instituted in March of last year, several factors such as infected people sharing cramped living spaces with family members, and non-compliance of advisories to prevent the spread were counter intuitive to control measures put in place¹⁰. The nation-wide lockdown was meant to last three weeks, extending till end of May with a resumption of economic activities such as agriculture, construction, and manufacturing in late April. A phased opening began in June 2020. In April 2021, amid the second wave, restrictions were imposed under the 'Break the Chain' campaign. This was in place till June 15th, with relaxations in areas with decreasing cases of Covid.

The July tally of Covid-19 cases in Mumbai (12,557) was lower than the January tally (16,310), which is the period between the first and the second wave. The first peak for the state was observed around September 18, 2020, when active cases rose to 34,259. Between waves, measures were put into place to increase hospital beds and replace the cylinder-based system with a pipe-based system in its hospitals and Jumbo Covid Centres across Mumbai.

⁷ Grover A, Singh RB. Geographical background: Delhi and Mumbai. In *Urban Health and Wellbeing 2020* (pp. 63-101). Springer, Singapore.

⁸ Jamir L, Najeeb S, Aravindakshan R. COVID-19 preparedness among public and healthcare providers in the initial days of nationwide lockdown in India: A rapid electronic survey. *Journal of Family Medicine and Primary Care*. 2020 Sep;9(9):4756.

⁹ Coronavirus: protective health gear, N-95 masks, coveralls in short supply. *Business Today*. 2020; (published online March 25) (accessed 2021) <https://www.businesstoday.in/current/economy-politics/coronavirus-protective-health-gear-n-95-masks-coveralls-in-short-supply/story/398955.html>

¹⁰ Ramasamy D, Sundararajan J. COVID-19 outbreak at Mumbai City: Disaster management analysis. Kannamani and Jayakumar, COVID-19 Outbreak at Mumbai City: Disaster Management Analysis, *Journal of the Social Sciences*. 2020 Jul 10.

Rationale

Till date, Mumbai has reported 7,37,685 cases and a death toll of 16,048, making it one of the country's biggest hotspots. The city has a severe shortage of beds- one per 3000 individuals, well below the WHO guidelines of one per 550. This has exacerbated the stress on MHWs who have suddenly had to bear a disproportionately large burden of the work. There is a need to assess the impact of COVID 19 on the physiologic, mental, emotional, and socio-economic situation of MHWs in Mumbai to feed into the above-mentioned program supported by JICA.

We conducted a situational analysis given the paucity of time and Covid-19 restrictions in the city. This helped to optimise quality data collection and provide comprehensive information to realistically assess the current situation of impact of Covid-19 on MHWs and provide an evidence-informed basis for responding to the same.

This study will contribute to providing evidence-based recommendations to help mitigate impact of Covid-19 on MHWs which will feed into JICA's cooperation initiatives in India.

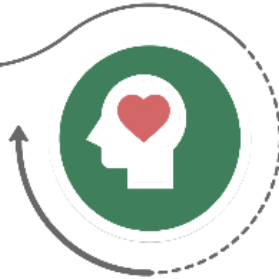
Scope of the Study

The study will generate substantial evidence on mental, physical, economic and social impact of Covid-19 on MHWs during both waves of Covid, as well as facility level measures and support structures put in place to mitigate the same. The evidence will facilitate formulation and sharing of guidelines towards strengthening healthcare system during a pandemic response as well as realising scope of utilization of measures that already exist.



Objectives

To study the effect of COVID-19 and subsequent turn of events/strikes on physiological, psychological, and mental health and related aspects of MHWs in India.



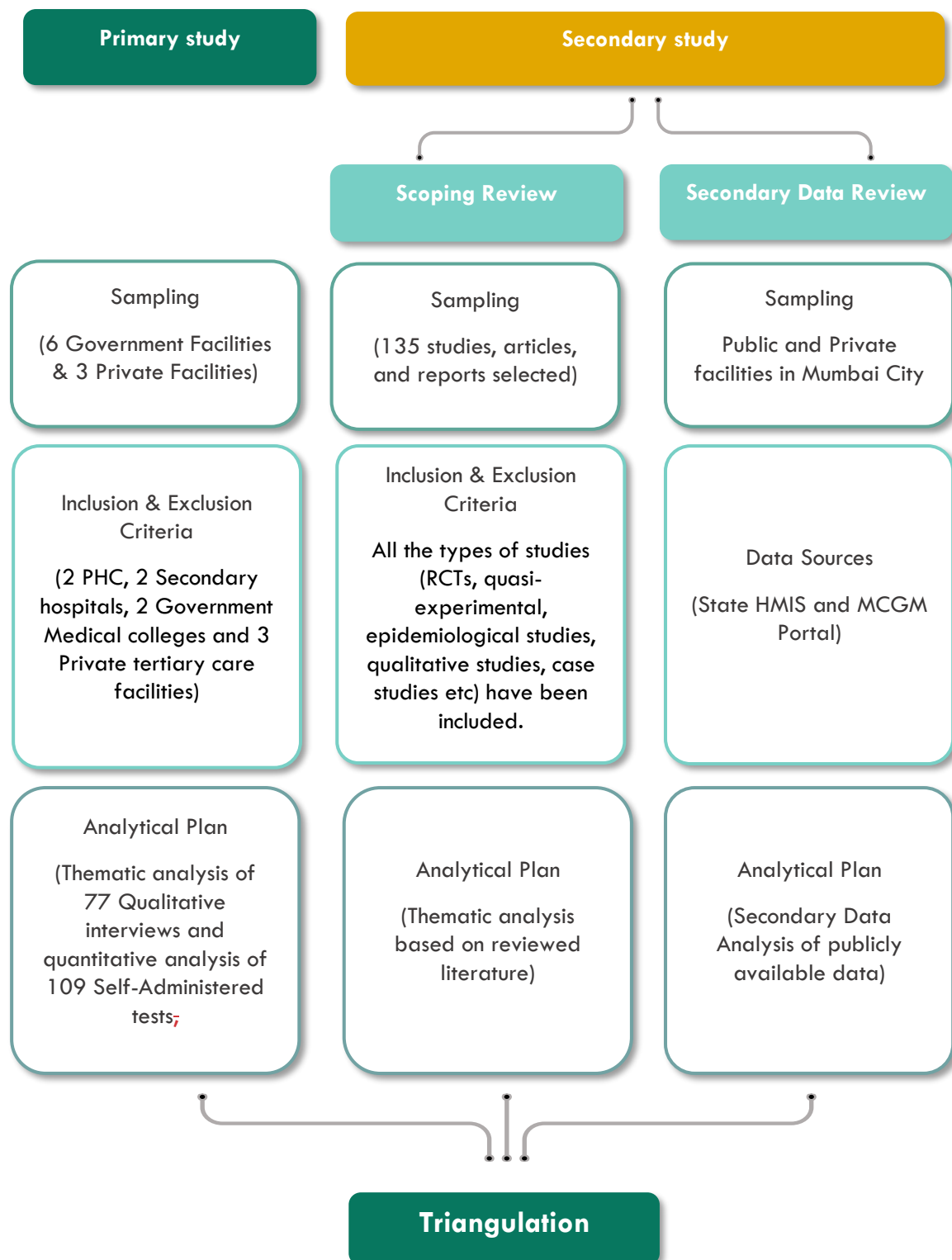
To study the effect of COVID-19 on the health system and the provision, availability and utilization of essential health services, resources, and equipment.



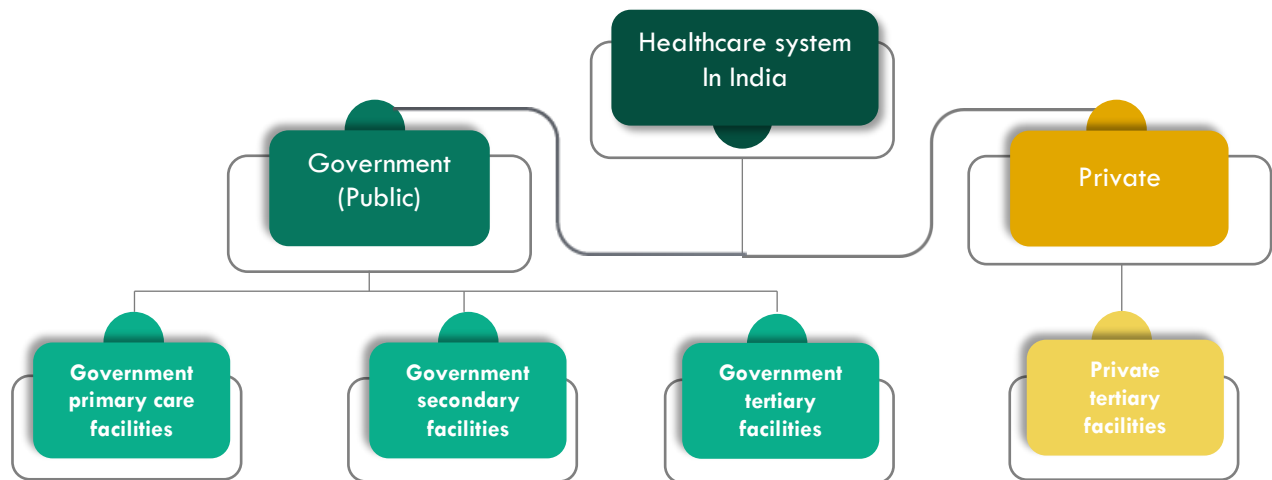
To study the efforts (Change in service provision/utilization/collaborations/coordination/ adaptations etc.) and adaptations made by MHWs in providing health care and services to reach the demand.



Approach and Methodology



Health Facility Types



The key responsibility of these facilities is to provide comprehensive preventive, promotive and nondomiciliary curative care. While primary health care through Urban PHCs is universally available to all citizens residing in urban areas, outreach services are provided on a targeted basis for the slum and other vulnerable population. Primary Healthcare in urban area is provided through Health posts and Family Welfare Centers

Secondary Healthcare refers to a second tier of health system, in which patients from primary health care are referred to specialists in higher hospitals for treatment. In India, the health centres for secondary healthcare in urban areas include general hospitals and health centres at the municipal/ward level at block level.

Tertiary Health care refers to a third level of health system, in which specialized curative care is provided usually on referral from primary and secondary medical care. Specialised Intensive Care Units, advanced diagnostic support services and specialized medical personnel on the key features of tertiary health care. In India, under public health system, tertiary care service is provided by medical colleges and advanced medical research institutes.

These are privately owned tertiary care facilities providing COVID-19 treatment and management services. For the purpose of our study facilities were chosen having 200-300 beds and ICU facilities. For Covid, these hospitals were equipped with oxygen and ventilators.

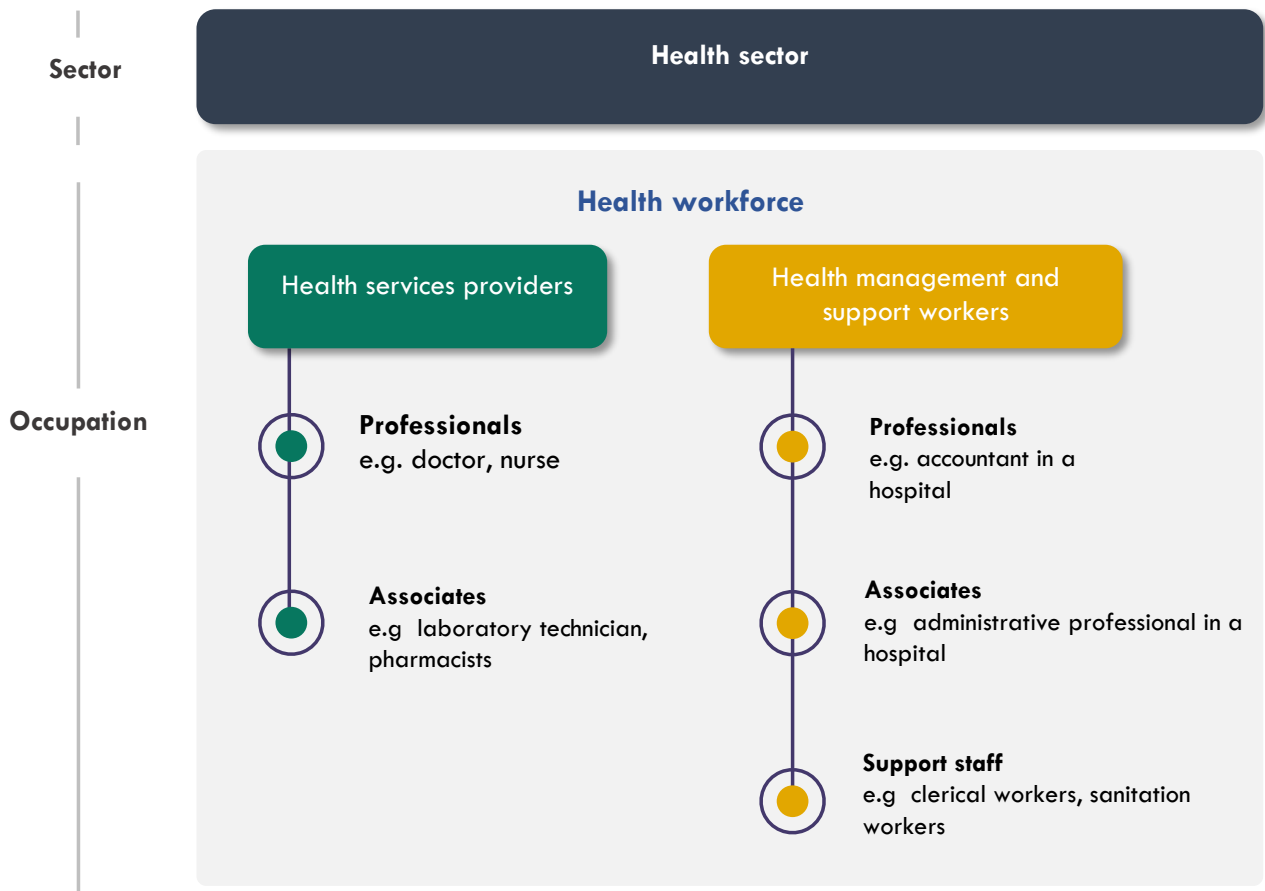
Who are medical health workers?

As defined by the CDC, health care personnel “refers to all paid and unpaid persons serving in health care settings who have the potential for direct or indirect exposure to patients or infectious materials.”¹¹ WHO report on Working together for health defines health workers to be all people engaged in actions whose primary intent is to enhance health.¹²

¹¹ <https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/appendix/terminology.html>

¹² The World Health Report 2006 Chapter 1 Health Workers: a global profile

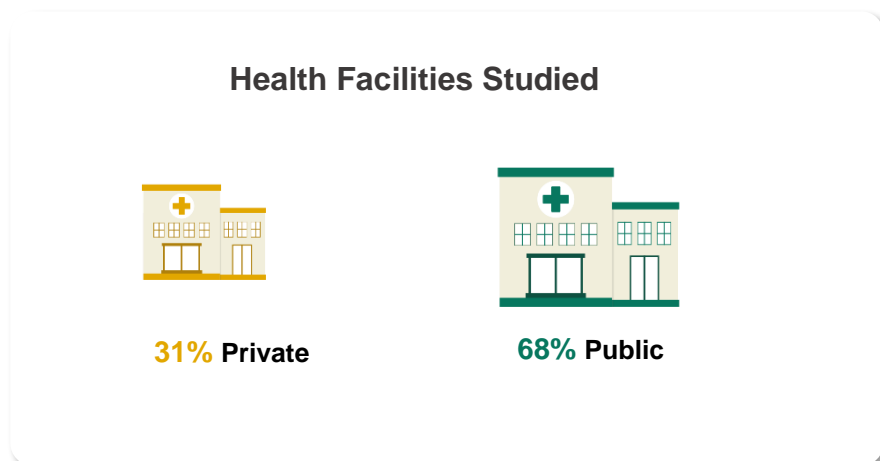
Health workers in all sectors



Findings

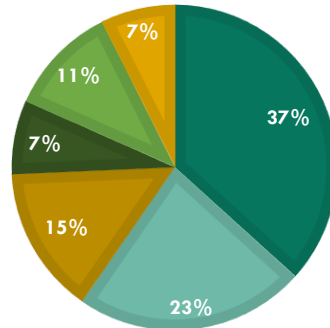
A. Primary Study:

Quantitative Snapshot

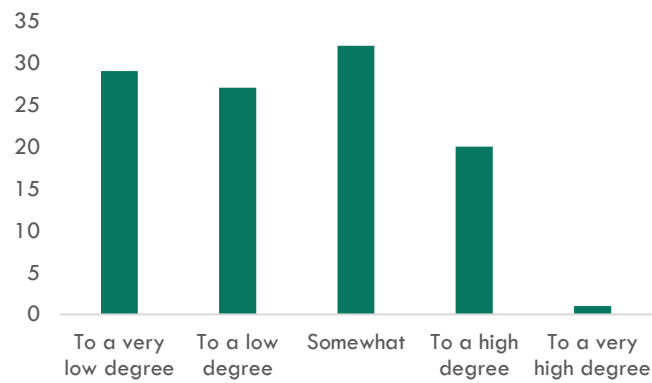


Cadres of Respondents

Doctors Nurse Administration Support Workers FLW

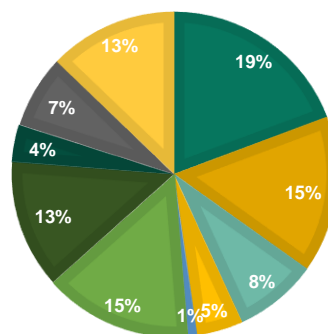


Burnout Levels experienced by MHWs



MHWs experienced Nervousness & Stressed (Recall - One month)

Never
Almost never
Sometimes
Fairly often
Very Often
Somewhat
To a very small extent
To a very large extent
To a small extent
To a large extent



SCALE: 0-25: No to low Burnout/Stress

25-50: Low to Moderate Burnout /Stress

50-75: Moderate to high Burnout/Stress

75-100: High to severe Burnout /Stress

Respondent	Personal Burnout		Work Related burnout		Perceived Stress ¹³
	W1 ¹⁴	W2	W1	W2	
Doctors	35.3	37.29	41.56	41.77	51.1
Nurses	37	36	37.75	36.75	40.4
Administration and Support Staff	24.6	13.96	35.1	29.06	28.5
Front Line Workers and Allied Health workers	29.7	27.08	35.16	34.9	30

	W1	W2	W1	W2	
Doctors	35.3	37.29	41.56	41.77	51.1
Nurses	37	36	37.75	36.75	40.4
Administration and Support Staff	24.6	13.96	35.1	29.06	28.5
Front Line Workers and Allied Health workers	29.7	27.08	35.16	34.9	30

Perceived Stress Scale

Overall

	0	25	50	75	100
In the last month, how often have you been upset because of something that happened unexpectedly?	29.36	20.18	23.85	21.10	5.50
In the last month, how often have you found that you could not cope with all the things that you had to do?	39.45	22.94	22.02	11.93	3.67
In the last month, how often have you been able to control irritations in your life?	7.34	5.50	29.36	37.61	20.18
In the last month, how often have you been angered because of things that were outside of your control?	29.36	16.51	31.19	13.76	9.17
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	40.37	24.77	22.02	7.34	5.50

¹³ For May-June 2021

¹⁴ W1- Wave 1 (September 2020) W2- Wave 2 (April 2021)



Qualitative Snapshot

Category	Key Findings
Challenges in role	<ul style="list-style-type: none"> • High increase in workload • Change in role of doctors • Lack of prioritization of nurses or treated at par with doctors in providing PPE • Shortage of supplies (drugs/PPE) • Disruption from routine work • Lack of transportation in initial lockdown months • Extra accountability and burden on hospital leadership • Newness of disease- lack of guidelines initially • Distress call from patients/family members all the time • Aggressive patients/families
Change in role	<ul style="list-style-type: none"> • Leadership had to take extra responsibility • Managing new activities- food, stay transportation • Increased workload for nurses and doctors including providing patients psychological support during isolation
Mental Health Impact	<ul style="list-style-type: none"> • Most instances of stress, mental fatigue, fear and anxiety • Emotional state in the second wave due to high mortality rate • Frustration and irritation noted • Immense pressure for leadership • Traumatizing- feeling low, helplessness • Isolating experience, leading to feelings of loneliness • Reasons include- Increased workload, Fear of infection, Newness and less knowledge of Covid-Seeing patient/colleagues suffering/dying, resource constraints and Inconsiderate patients and relatives with unrealistic expectations
Physical Health Impact	<ul style="list-style-type: none"> • Less appetite, dehydration, tiredness, weakness, cramps in legs, body ache, loss of stamina, mask strain, fatigue, weight loss • Exhaustion and burnout • PPE causes fainting, tiredness, exhaustion, sweating, suffocation, headache, dehydration and rashes • Reasons- increased workload, less chance of breaks and PPE usage



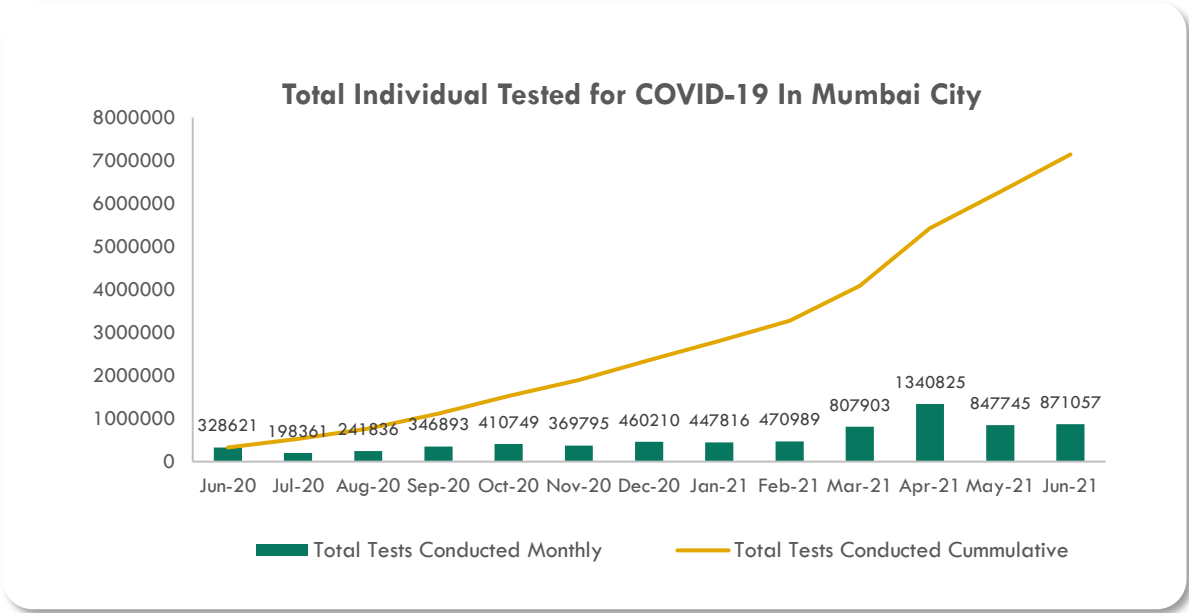
Category	Key Findings
Mental and Physical Health Linkages	<ul style="list-style-type: none"> • Taxing regime and stress showing in form of migraine, weight loss, • Mental stress due to PPE use • Lack of sleep leading to irritability
Impact on lives of MHWs	<p>Economic Impact</p> <ul style="list-style-type: none"> • No adverse economic impact (loss of salary, extreme delays) • Covid compensation incentive provided • Dissatisfaction with compensation based on workload during covid <p>Social Impact</p> <ul style="list-style-type: none"> • Reduced time with family and friends leading to frustration • Only see family online/isolation from family • Few cases of discrimination mentioned in being shunned in area of living • Most commonly respect for MHWs for work being done • Frustration of dealing with rude family members of patients
Mitigation Measures	<p>Leadership Level</p> <ul style="list-style-type: none"> • Almost all instances of leadership being supportive, approachable, and motivating employees at all cadres including by provided information on Covid to support staff, arranged travel, PPE- open door policy • Few participants highlighted not involving management for any conflict resolution as unsure of response, leadership under stress themselves • Only 2 facilities provided structured facility level support - counselling sessions
Suggestions	<ul style="list-style-type: none"> • Mental health counselling to be provided to MHW by facility • Increased communication with leadership on problem solving • Incentives to enhance motivation as well as give due importance to non-medical staff/support staff • Better emergency preparedness to reduce stress including increase HR, training response team accommodation to stay separate from family and reduce stress

B. Secondary data on COVID-19 (Mumbai)

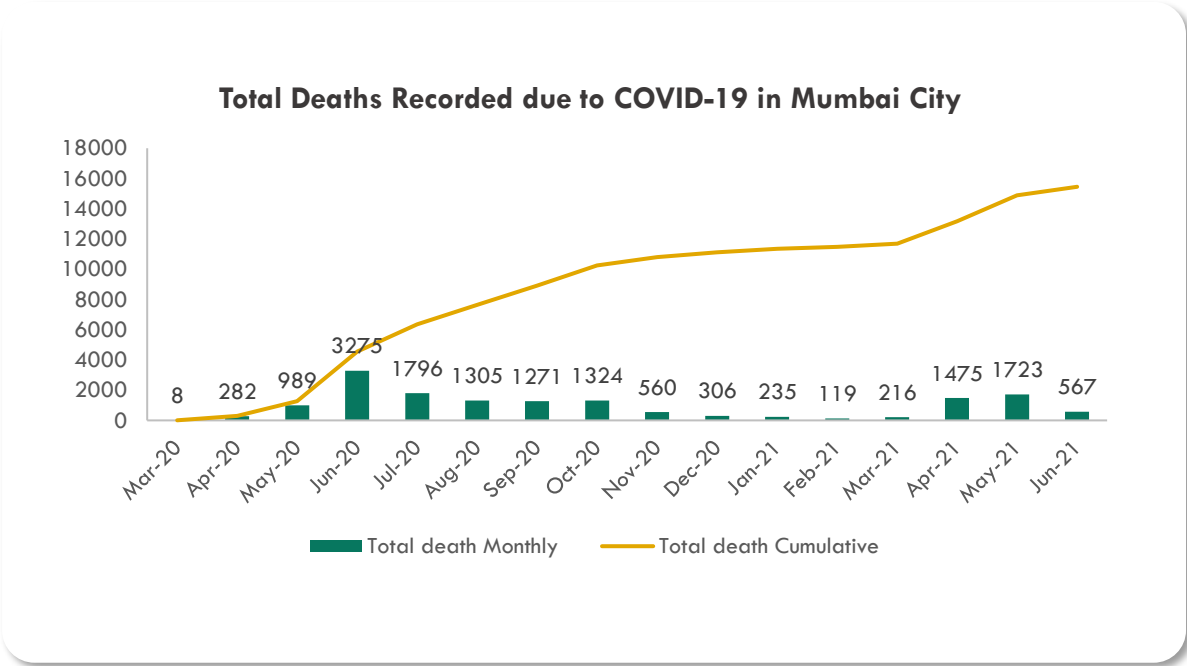
Mumbai has had over 7 lakh positive cases since September 2020. Most number of cases were recorded in April 2021, in the second wave with over 2 lakh infected cases identified across the month. The positivity rate¹⁵ in April 2021 was over 17% based on the figures revealed by the Municipal Corporation of Greater Mumbai.

¹⁵ Positivity rate: Percentage of all coronavirus tests performed that turn out to be positive





As of June 2021, over 71 lakhs individuals have been tested in Mumbai city. With ramping of testing services, April 2021, saw the highest number of tests (over 13 lakh individuals) in the city with the incoming second wave. While the number of individuals being tested has remained consistent in early months of pandemic (June 2020 onwards), it is observed that the number of tests conducted started increasing during the peak of first wave in September 2020.



Based on figures of June 2021, a total of 6 lakh recoveries have taken place in Mumbai. The cumulative recoveries are approximately 96%. During the peak of the second wave in April 2021, the recovery rate was at 88.25%.

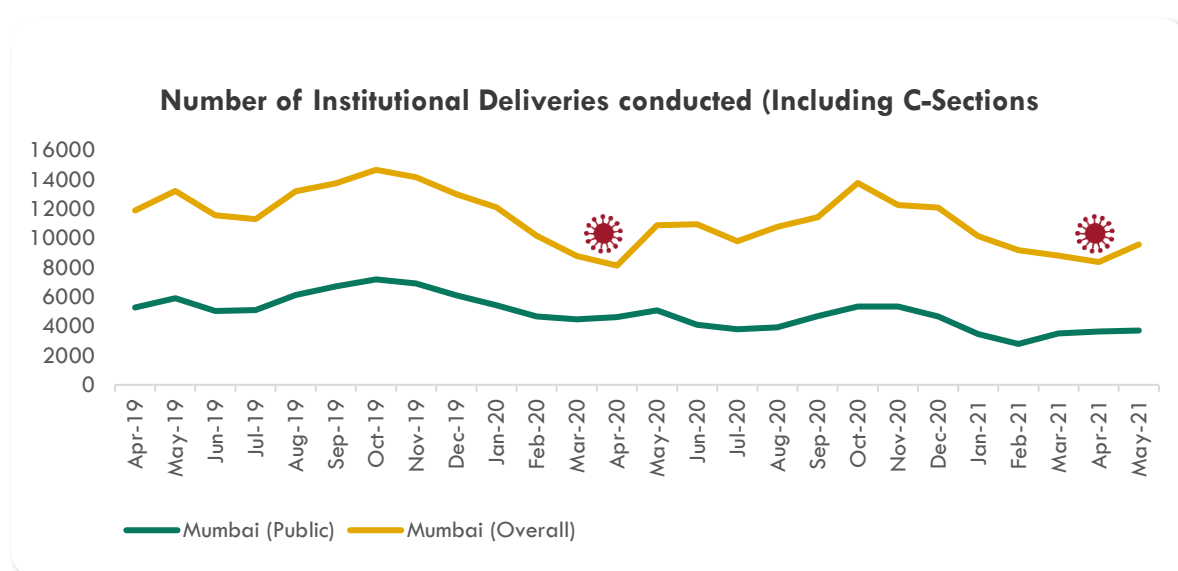
However, the city has also seen numerous deaths attributed to COVID-19. A total of 15,451 death have been recorded in the past year. The highest number of deaths occurred in June 2020 (3275). During the second wave, in April and May 2021, over 3200 deaths were recorded. Compared to the national average fatality rate for COVID-19, the fatality rate in Mumbai has remained high, peaking in June 2020.

C. Secondary Data on Health Service Delivery

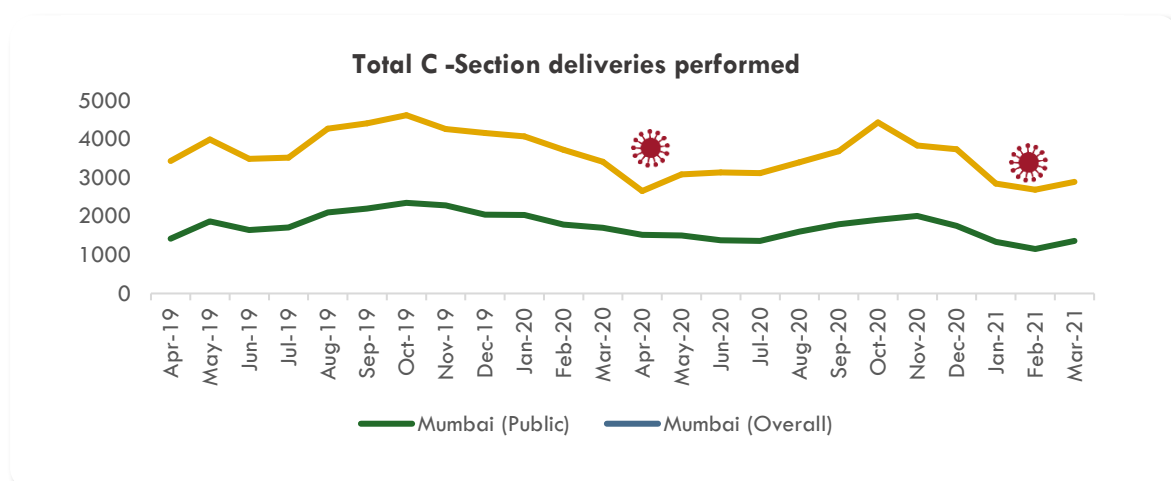
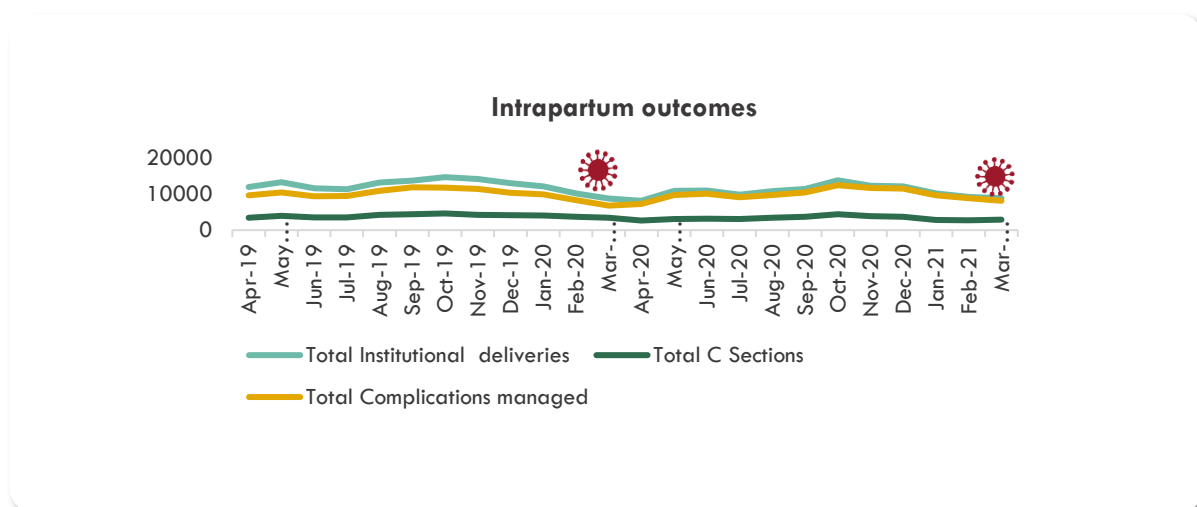
i. Impact on Service Delivery in Facilities

Impact on key Maternal and Child Health (MCH) Services

Given the government orders barring all outreach services due to COVID-19, a significant reduction was reported in the number of pregnancies registered within 1st trimester, out of the total registered pregnancies, in April 2020 in Mumbai. Post lockdown, these registrations resumed but didn't reach pre-Covid levels until October 2020. Service delivery increased after October 2020, and coverage recovered to pre-pandemic level before the second wave. The lowest registrations recorded was during the month of April 2020.

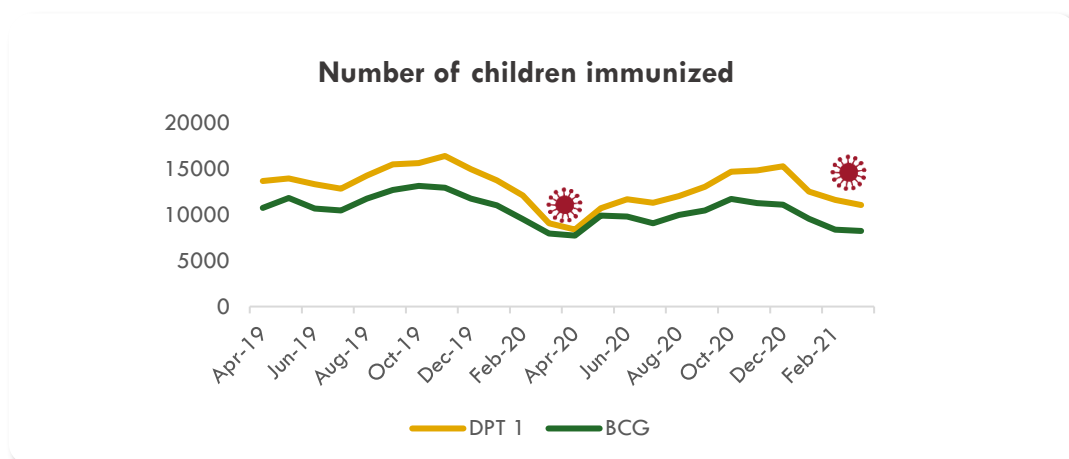


There has been a decrease in institutional deliveries owing to the pandemic over starting from January 2020, dipping the most during the first wave of the pandemic. Additionally, Caesarean Sections, have reduced in a slightly higher proportion (for the same time frame) than institutional deliveries. The second dip is visible during the second wave (starting January 2021) and starts to pick up in May 2021.



In the last quarter of 2019 and 2020, relatively the institutional deliveries are higher compared to other months in the respective years, but in the last quarter of 2020 there is a visible difference in overall institutional deliveries. Home Based New-born Care (HBNC) Visits for New-born reduced by 24% in both the first and second wave.

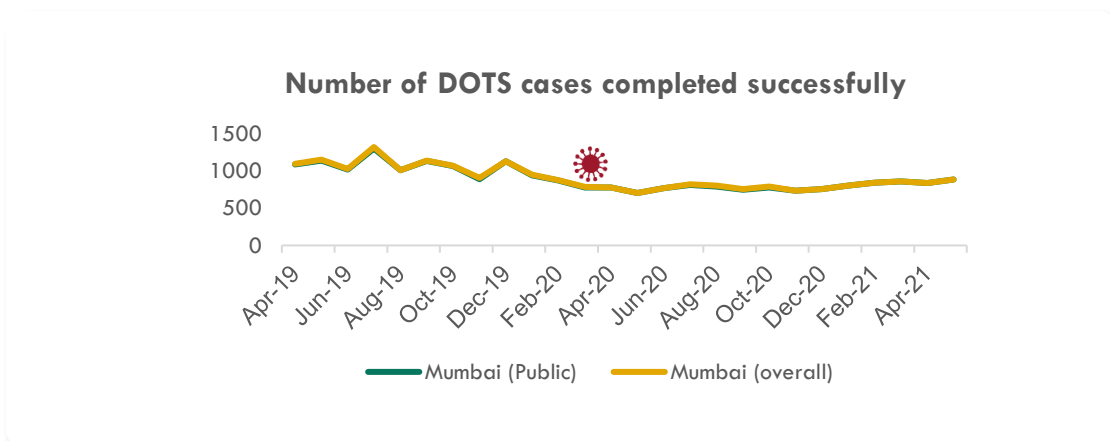
Impact on immunization services



There has been a sharp decline in the number of immunization sessions held in the city during the lockdown in the first wave, as well as entering the second wave. However, there has been a further decline in the number of immunization sessions attended by ASHAs only during the first wave, post which an almost pre pandemic rate has been achieved till March 2021. Suspension of outreach MNCH services, and diversion of all FLW toward COVID duties are likely reasons for this drop.

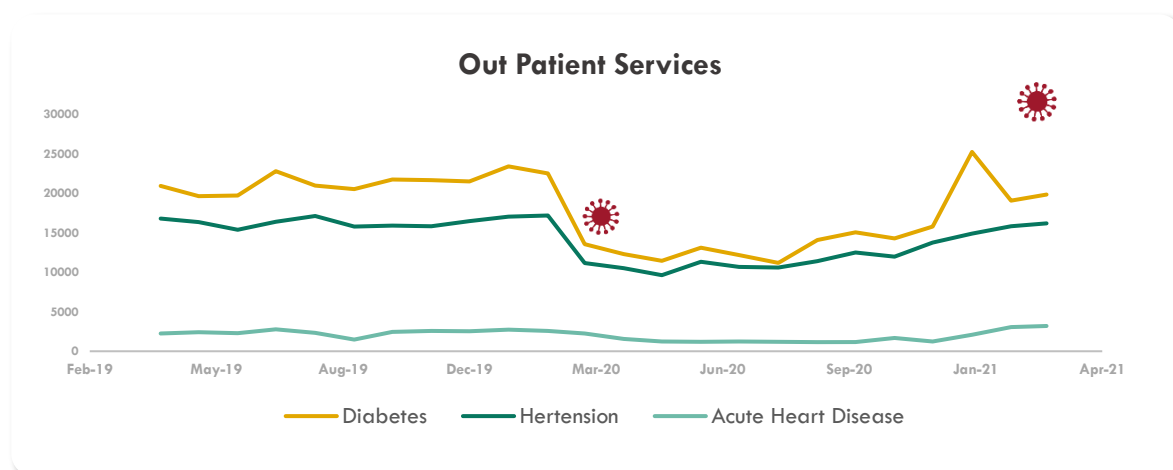
Impact on Tuberculosis program

Closure of out-patient departments (OPD) at various hospitals, poor access to treatment, refusal by government and private hospitals, difficulty in reaching Direct Observed Treatments, Short course (DOTS) centres programme by patient and medical staff due to limited transport are possible reasons for decrease in DOTS registration in the initial months of the pandemic. The reduction in registrations also led to decrease in DOTS cases completed successfully, with an average (6 month) drop of 23% drop since March 2020. Till May 2021, there has been no recovery in this number.



Impact on key Outpatient Services

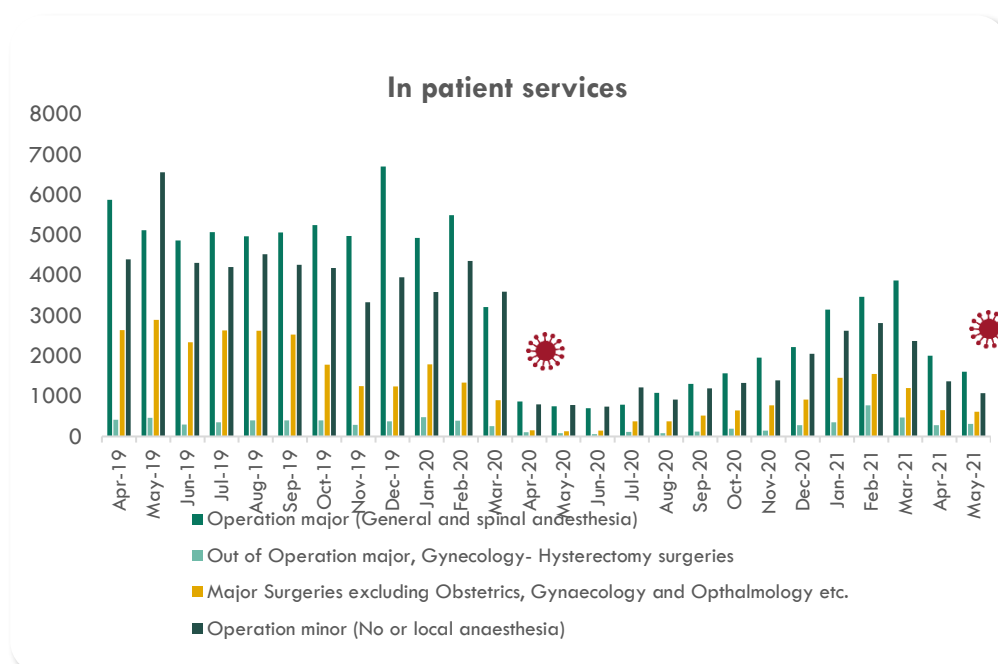
The outpatient services for diabetes, hypertension and heart disease fell considerably during March - April 2020 with the imposition of lockdown. These services showed negligible resumption, and only reached pre-lockdown level in January 2021, again dropping in March 2021 by about 30%. Pre pandemic rates have not been achieved.



Impact on Inpatient service delivery

Since the pandemic hit the city, there has been a decline in the service utilization of inpatient services in Mumbai. There has been a significant decline in the number of adult inpatients since March 2020, with the lowest numbers recorded in April 2020. Recovery of inpatient services for adults and children has been slow, and not reached pre-pandemic levels, dipping again during the second wave from March 2021. A drastic fall has been observed in the total surgeries performed in health facilities. Diversion of resources, risk of contracting and spreading virus, and a short fall in availability of essential drugs and equipment have been major contributing factors.

There has been a significant and prolonged decline in the cases registered at emergency department across all facilities in Mumbai. There has been a slow increase in the same but pre pandemic rates have not been achieved. In a similar decline has been seen in the number of surgeries performed. All types of surgeries in health facilities have paused, most likely due to the government's strategy to minimise risk of infections.



Triangulation of Primary and Secondary Data Findings

D. Health Service Delivery Impact

i. Impact on facility organisations

The pandemic highlighted how various organisations functioned under the burden of the pandemic and highlighted difference in preparedness between the waves. Almost all participants mentioned facing a greater burden of work and mental impact in the first wave owing to lack of preparedness, awareness about the disease and shortages of equipment and medication, though the second wave saw a larger burden of deaths.

A stark contrast was seen in how Covid affected change in roles between cadres. Doctors and nurses bore the brunt of rerouting routing services to Covid care, with instances of doctors from other specialities being involved in the same. Pharmacists and lab technicians mentioned additional work of dealing with procuring drugs and increased testing respectively. Support staff roles seemed to be the least affected by the pandemic.

Challenges were highlighted during the pandemic in carrying out duties across different cadres. A lack of manpower was highlight across most facilities creating additional burden in managing high volumes of patients. Lack of PPE created an additional stress amongst MHW highlighted by nurses who felt they were not prioritised as much as doctors as caregivers. Within a government primary level facility, an instance of the availability of only one PPE kit for nurses was highlighted, leading to nurses wearing it and working on a rotation basis.

Changed roles as highlighted above posed a challenge in adjusting to Covid duty from a different speciality as well as a disruption from routine work. Leadership pointed out extra burden and accountability to ensure smooth health care service delivery under them.

The newness of Covid posed additional challenges on multiple fronts- lack of awareness about the disease and guidelines initially, as well as initial challenges in the lockdown such as lack of transportation fed into difficulties for health workers to carry out their roles. The newness and burden of the disease also meant healthcare workers had to face aggressive patients and families and constantly tackle distress calls over and above their increased workloads. Considering the constraint on availability of beds in the second wave, an instance of the use of political pressure to find a bed was also highlighted, creating an additional burden for leadership. Several studies also highlight perceived uncertainty, lack of scientific evidence, and frequently changing protocols as widely prevalent concerns among MHWs.

Routine practices were disrupted during both the waves, with institutes declared critical covid care centers providing only covid care. As noted above, rerouting of doctors towards covid care translated into lesser doctors available for routine services due to Covid duty.

ii. Facility Adaptation

Literature has highlighted measures put in place for infection control and effective management of human resources including creating a core COVID-19 action group and division of staff into two groups: for COVID- 19 and non-COVID patients were adopted were adopted to safeguard the continuity of services. Staff rotations were highlighted both in the literature as well as in qualitative interviews for nurses. While this was noted within the scoping review to help alleviate fatigue, this was not highlighted as an effective measure within the interviews.



The decrease and cancellation of leaves reflected in both primary and secondary data with just a covid compensatory leave once a week

Provision of trainings to staff on new emerging guidelines and infection control was integral for staff echoed by the secondary literature. Trainings were provided on infection control, sanitization, PPE Kit, donning and doffing of PPE, and the management of COVID-19 patients as per protocols was made mandatory. While the literature highlighted efforts around training and capacity building of MHWs to provide patient care services for non-COVID illnesses like diabetes, CVD etc, this was not reflected within the interviews, where instead a focus was given only to Covid related health service delivery. A primary level government facility indicated that the BMC (Brihanmumbai Municipal Corporation) conducted trainings over zoom. Providers indicated needing to expand knowledge beyond their specialties due to Covid duties.

Facility adaptation to resume routine service delivery gleaned from qualitative interviews included bifurcation of Covid and routine services, compulsory RT PCR tests for routine services and only allowing for emergency surgeries over routine. Similarly, literature highlights the protocols put in place to adapt to the “new normal”.

iii. Covid-19 adaptation & preparedness for surge

Literature highlights creation of separate areas for management of Covid-19 patients with examples provided of temporarily shifting to separate buildings. Further modification of OPD areas, as well as spacing within operating rooms. Facilities also attempted to strengthen oxygen supply in order to prepare for upcoming waves. Within primary health centres, strengthening of existing infrastructure included creation of more open spacing and designated waiting and hand wash areas. Studies highlighted working on ventilation to minimise risk of infectivity though the feasibility was questionable since, patient registration, laboratory and some procedures were held in rooms with compromised ventilation.

All participant's highlighted facilities are prepared as best can be while noting initial resource crunch. Some of the findings echoing literature review included the creation of separate covid wards and covid ICU wards with guidelines in place, including segregation of Covid patients. Within a government primary centre, the establishment of a separate covid ward for infected medical health workers, admin staff etc was mentioned. Similar to the literature, most facilities mentioned increasing infrastructure in terms of number of beds, oxygen supply, PPE kits, sanitizer machines. Doctors from paramedical and other departments were posted to covid wards to ensure adequate staffage, and an instance was highlighted of hiring additional lab technicians to deal with the testing surge.

The qualitative study also highlighted efforts put in place to ease the lives of MHWs. This ranged from provision of transportation, meals and for government facilities, accommodation as well during the waves. To ensure prevention of infection of the most vulnerable MHWs, guidelines were put in places for the same wherein those over 55 years of age and/or with comorbidities were not allowed to work in Covid wards. Like the literature findings, adequate ventilation within facilities posed to be a problem.

E. Mental Health Impact

i. Change in role and workload

The qualitative findings highlighted extra workload as well as extra learnings due to the pandemic. Medical staff rerouted to Covid duty from their existing line of work found themselves completing



changing their daily duties. At a leadership level, a feeling of extra responsibility and accountability was felt across the board. With guidelines in place to arrange for extra amenities for employees such as stay and transportation, this added to the role of hospital administration staff.

For pharmacists, managing oxygen supply and supply of drugs specific to covid was a new introduction to their current role. Psychological support provision to patients in isolation from family members also added to the workload of nurses and doctors.

General increase in workload noticed was across all cadres and facilities with extended timings of work noted for doctors, nurses. Workload distribution was deemed to be mostly fair, with colleagues taking over extra workload in the absence of another across all cadres. Few instances were highlighted of unfair distribution of work by shift timings, specialty, and work experience. Given the nature of disease, those working in the field of pulmonology had the maximum involvement in provision of care to covid patients. Residents also highlighted bearing the burden of work over more senior staff given they needed to be available for both their specialty duties, covid duties as well as requiring extra time to study.

This increase in workload and sometimes unfair distribution of workload in some instances translated into conflict within the workplace and in one instance, outbursts towards patients. In case of conflicts within colleagues, these instances were mostly solved within the concerned parties rarely involving leadership.

Secondary evidence points towards mental stress and disorder among MHWs which could stem from role conflict (between the professional and familial role) and getting caught into potential moral injury exposure (defined as profound psychological distress which results from actions, or the lack of them, which violate one's moral or ethical code).

ii. Impact and symptoms on general mental wellbeing

Literature presents high levels of anxiety disorders amongst MHWs, ranging from 23.9% to 62%. It highlighted increased levels of anxiety amongst among nurses and FLWs during the pandemic especially those with clinical duties. Depression was also prevalent within the literature, ranging from ~27% to more than 50% of the participants. Prevalence of PTSD and similar symptoms were also found to be common amongst healthcare workers.

Our primary data did not highlight any instance of depression or PTSD as could be perceived by negative thoughts, detachment, etc. Only two accounts of anxiety were highlighted. This could also be due to a lack of nuanced understanding between stress and anxiety, the former being more prominently highlighted within our study.

The scoping review also highlighted a wide range of prevalence of stress (15-75%) depending on various factors such as number of years in experience, hours of work, use of protective equipment. Stress was palpable in forms of instances of frustration and constant irritation. Our qualitative findings underscored higher instances of stress, mental fatigue, and fear. Higher mortality in the second wave also contributed to heightened sense of distress, low feeling and a feeling of helplessness. The pandemic being an isolating, lonely experience was also highlighted.

Doctors who were not involved in Covid duty did not mention instances of stress, though those at a leadership position felt immense pressure to handle processes within their facilities during the waves. The self-administered questionnaire results reflect a difference in burnout by cadres as well. Among MHWs, each of the respondent categories reported higher level of work-related burnout. Personal Burnout levels were higher for doctors and nurses than the rest of the respondent categories. Work related burnout showed little variation between the first and second wave. Doctors were most affected, with increased level of personal burnout in the second wave. Perceived stress has been higher for doctors and nurses – due to the nature of work and direct involvement in managing cases.

The self-administered questionnaire highlighted MHWs reporting close to moderate levels of burnout. Personal Burnout levels were low, but there was higher work-related burnout. Between the first and second wave burnout among MHWs had decreased, possibly due to increased familiarity with processes and experiences to draw from the first wave. We find that higher proportion of respondents associated increased stress due to lack of time and multi-tasking.

The findings from the perceived stress scale also shows close to moderate stress levels among MHWs with the average score of ~40.

iii. Reasons and Triggers impacting Mental Health

Studies identified reasons contributing towards increased anxiety and stressors as uncertainty over roles and responsibilities, chance of being quarantined, increased susceptibility to infection (discussed in-depth later). Positive predictors of stress also included lack of vaccination, lack of proven treatments, extended and uncertain working hours, threat to personal safety from the disease as well as from violence towards health care professionals by the relatives of the patients. Literature also highlighted increased instance of burnout among MHWs attributable to long working hours, donning PPE kit for long hours, communication gap between facility members, absence of tangible support from the higher authority and misinformation.

Our qualitative findings indicated similar themes- while not separated at a nuanced level of predictors of stress, anxiety or burnout separately. Fear of infection, the newness and lack of knowledge about Covid contributing to a fear of the unknown, were all major predictors of stress. For leadership, an increased sense of accountability and challenges to manage smooth flow of services during the waves further added to the stress. Unrealistic expectations and inconsiderate demands of patients and family members further contributed to stress. During the first wave, an added burden on MHWs was a lack of availability of transportation as well.

Both the literature and qualitative data point towards resource constraints (both supplies and human resources) as a major source of stress. The qualitative findings indicate how a lack of equipment lead to helplessness towards being unable to help patients. Lack of PPE kits lead to fear and irritability and stress due to fear of infection. Pharmacists highlighted trying to arrange Covid specific medications stressful due to shortages. Decreased availability of HR leading to increased workload seemed to weigh heavy on the teams

MHWs were further disheartened seeing the general population getting lackadaisical about safety measures whilst dealing with the burden of the pandemic and high mortality. The constant exposure to death and suffering of colleagues and patients contributed to a feeling of helplessness and sadness.

Burnout/mental fatigue stemmed from an increased workload and utilization of PPE. A lack of social life further leant to mental fatigue and an isolation.

iv. Susceptibility to infection

Literature highlighted health workers having a higher risk of contracting COVID-19 in comparison to general population, in spite of increased testing. Risk factors leading to increased susceptibility included gender (male MHWs at heightened risk), age (65 and above at heightened risk), Medical specialty (MHWs from Anaesthesiology, dentistry and otorhinolaryngology are more prone to acquire COVID—19) and lack of training to deal with COVID-19. Most participants interviewed had also been infected by Covid, with doctors and nurses stating more chances of infection in comparison to support staff, reiterating the literature.

Studies point out increased anxiety due to risk of contracting infection due to direct involvement in the care of suspected or diagnosed patients. Some of the common factors identified across the studies for increased anxiety included risk of contracting infection due to direct involvement in the care of suspected or diagnosed patients, uncertainty over roles and responsibilities, chance of being quarantined, and infecting family members and relatives. The same finding was echoed across the board through the qualitative interviews wherein there was a fear of catching the infection adding to stress especially when seeing colleagues catch the disease and passing away. There was a further stress of transmitting infection to family. Lab technicians highlight fear of catching infection from handling samples.

F. Physical impact

Physical impact due to the burden of providing care on MHWs most commonly seen headache, throat pain, anxiety, lethargy, poor appetite and insomnia. The literature review also highlighted generalized nasal discomfort, dry nose, burning sensation in the nose and mask related pain in the nose and ears. Our primary data collection pointed towards instances of loss of appetite, dehydration, weakness, cramps in legs, body ache, loss of stamina, fatigue, weight loss and pimples due to mask being the main physical manifestations on MHW.

Exhaustion and burnout were common, due to increased workload and hours, less chance of breaks as well as PPE.

i. Impact of PPE kit on Physical Health

Our qualitative findings reveal the most common physical complaint to be exhaustion, dizziness, and breathlessness attributable to wearing and working in PPE kits for long periods of time. The highest impact on physical health was seen due to wearing PPE, which lead to fainting, tiredness, exhaustion, sweating, suffocation, headache, dehydration, and rashes noted across the board.

Similar insights were revealed through the literature wherein tight-fitting masks lead to suffocation and mask strain.

ii. Impact on rest

MHWs had limited time to rest, both while working a long shift as well on weekly basis. Initially, there were no fixed hours or leaves, where later a compensatory “**covid leave**” was introduced once a week.

iii. Mental and Physical Health Linkages

Studies have pointed out that working in the pandemic, several MHWs experience reduced sleep, and altered sleep cycles as a direct consequence of stress and overall poor mental well-being. Our qualitative data revealed an overpowering fatigue wherein mental health was bylined because of the same.

The taxing regime and stress manifested in the form of migraines, weight loss and the lack of sleep lead to irritability.



G. Resource Availability at Ground Level

All facilities mentioned facing shortages at some point of time in terms of HR, drugs and supplies such as PPE etc. For government facilities, donations were made for supplies such as PPE kits. The crunch in resources also led to an increase in stress, as highlighted in the above sections. Private facilities seemed to have more access to resources as compared to public facilities. The literature highlighted, majority of the health care providers (surgeons, doctors, nurses etc) using adequate PPE during most of consultations, surgeries, and other services.

The scoping review revealed a survey conducted in PHCs found that only 1 in 2 medical colleges and institutions were able to provide N95 masks to the health care providers at primary health care facilities. PPE suits were available at 27% sites, N95 masks at 50% sites, and surgical masks were available at only 39% primary health care sites.

H. Impact on life of MHWs

i. Economic Impact

As opposed to literature which showcased an adverse effect on financial status of healthcare practitioners, our qualitative findings reveal only one instance loss of income for MHWs, including loss of salary or extreme delays. One participant mentioned a 50% cut in pay, though other participants from the same facility did not mention the same. Given we specifically gleaned facility-based information from providers, we were unable to gauge loss of income in private clinics due to reduced patient load as was highlighted in the literature. As per the guidelines put in place, few instances of provision of an additional monetary incentive towards Covid provided. Few participants also expressed dissatisfaction with compensation based on workload during covid. One participant highlighted having extra expense due to staying separate from family members during the wave, otherwise there were no cases highlighted of extra expense.

ii. Social Impact

Interviews showcased most instances of respect for MHWs, a far cry from the ostracization and stigmatisation highlighted within the literature. This is important in the context of available literature finding a significant association of perceived stigma from family members and society with depression among the healthcare providers. This could also be an explanation for low rates of depression amongst our participants. It is still important to note a few cases of discrimination especially when the participant was Covid positive.

MHWs expressed frustration over a loss of time spent with family and friends, both due to increased work hours as well as fear of passing on infection.

The secondary review highlighted instances of physical violence faced by health care workers, with up to 75% doctors facing this during their practice in India. The main reasons highlighted included fear, anxiety, panic, misinformation, mistrust and misplaced quotes in the social media. Health system level factors inducing violent episodes include constraint on resource availability and poor infrastructure, fuels by low levels of literacy amongst the population and poor communication between health care workers and the larger population. Our primary data though did not highlight any incidence of violence towards



MHWs of any cadre, either within or outside of facilities, though MHWs had to deal with stressed and frustrated patients and their family members.

I. Mitigation Measures

i. Support from Management and leadership

Participants praised accessibility to leadership to discuss and resolve issues whilst dealing with the pandemic, but mentioned very rare, structured mitigation measures in place such as counselling sessions or stress management sessions. Almost all employees mentioned leadership being supportive, approachable, and motivating employees at all cadres including by provided information on Covid to support staff, arranging transportation, accommodation and meals.

The literature reflects the same, highlighting need for greater psychosocial support and clearer dissemination of disease-related information as possible mitigating strategies. While informal talk sessions with colleagues/leadership was commonplace to help resolve issues, few participants highlighted not involving management for any conflict resolution as unsure of the response, and leadership being under stress themselves.

Some facilities went above and beyond in recognising and motivating employees by way of providing certificate from facility, or arranging yoga, dance classes.

As mentioned above, only two instances were highlighted of provision of counselling sessions and the appointment of an honorary psychiatrist. The need of counsellors did not seem palpable. A participant from a government facility mentioned there being no need for counselling as they are used to a large workload. One facility mentioned creating sympathy groups and hiring psychiatrists to provide mental health support to only patients

A few negative experiences were highlighted. A facility cancelled leaves leading to increased stress, and one participant highlighted lack of sensitivity from leadership. Resident doctors also felt that they were given no recognition.

i. Mental support & Access to psychosocial support

MHWs relied heavily on friends, family and colleagues for mental support and expressed appreciation for the same. Self-care measures were also adopted to improve mental health including activities such as meditation, walking, music and painting.

Literature supports how support of MHWs was mostly provided by family members, friends, and colleagues. It also emphasises the role of spirituality and spiritual beliefs as coping mechanisms. A study conducted at the start of the pandemic highlighted seeking help from family and friends as a significant supportive measure¹⁶.

¹⁶ Chan AO, Huak CY. Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. Occupational medicine. 2004 May 1;54(3):190-6.

¹⁶ Cai H, Tu B, Ma J, Chen L, Fu L, Jiang Y, Zhuang Q. Psychological impact and coping strategies of frontline medical staff in Hunan between January and March 2020 during the outbreak of coronavirus disease 2019 (COVID-19) in Hubei, China. Medical science monitor: international medical journal of experimental and clinical research. 2020;26:e924171-1.



ii. Supportive Measures for MHWs

The analysis of policy measures put in place to mitigate effects of Covid-19 on healthcare workers indicate less focus on mental health support. Under the India COVID-19 Emergency Response and Health Systems Preparedness Package of the National Health Mission, recommendations for engagement and support of human resources included recruitment of additional healthcare providers (specialist and general physicians, nurses, pharmacists, ANMs, sanitation workers). Similarly, recruitment for multiple contractual positions were advertised by the municipal corporation of Mumbai, providing remuneration ranging from INR 60000 for AYUSH practitioners to INR 2 lacs for specialists and accommodation services especially at the jumbo COVID facilities in the city. In reality, primary data highlighted an HR crunch contributing to increased burden felt while working through the pandemic by nurses and doctors.

An insurance scheme for health workers fighting COVID-19 was announced under the Pradhan Mantri Garib Kalyan Package providing an insurance cover of INR 50 lacs to public and private healthcare providers, including community health workers, who may have to be in direct contact and care of COVID-19 patients and who may be at risk of being impacted by this. Although the scheme was introduced for 90 days from March 20, 2020; it has been extended multiple times and continues to date. However, a report from Maharashtra indicates that only 27% applicants have received the insurance money.

In Karnataka, the Government with the help of NIMHANS, drafted an advisory/guidance report for mental health promotion among healthcare workers. The most targeted initiatives offering psychosocial support were in the form of tele-counselling or helplines, with a national helpline for frontline workers set up by NIMHANS. Although there is no evidence its awareness among MHWs, it was reported that the helpline received 13,451 calls from healthcare workers up to July 2021.

Similarly, iCall, a psychosocial support helpline initiated by TISS, Mumbai set up a dedicated helpline number named Swaasthi for professional counselling and emotional support. Similar helplines and free mental support services have been set up by various NGOs. The pandemic also saw a massive response from the corporate sector. However, most of the healthcare-focused initiatives focused on health systems strengthening through expanding quarantine centers, aiding the setup of new healthcare facilities, expanding diagnostic, and screening services, improving the availability of medical products/supplies/personal protective equipment. While attention was directed to addressing poverty and livelihoods needs of vulnerable populations, there was an absence of measures targeting psychosocial needs of MHWs.

J. Perceived solutions/suggestions given

Suggestions and perceived solutions provided by MHWs from the qualitative data at facility level included better emergency preparedness to reduce stress including increasing human resource availability, training of response teams, provision of accommodation to stay separate from family and reduce fear-based stress. Facility based mental health counselling for MHWs was suggested, as well as counselling for patients and relatives to enhance their awareness and sensitivity towards MHWs. Given constant change in guidelines was noted as a stressor, a solution given was protocols being assessed by leadership to ease processes for staff. Increased communication with leadership to facilitate problem solving was also felt to be the need. For enhanced motivation, it was recommended to provide incentives as well acknowledge non medical staff.



Recommendations

Assuring uninterrupted regular provision of drugs and key supplies towards safe and effective provision of care as well as lessening the mental burden on MHWs. Potential actions should include creation of a reserve availability of supplies such as personal protection equipment; potential drugs, oxygen and maintaining adequacy of beds that could be quickly transformed into acute care beds. In major cities like Mumbai, tertiary care facilities need to have self-reliance on crucial supplies like IPC equipment and oxygen. State Government/City Governance should have a core digital inventory of all emergency supplies in the main stores linked with consumer units. By enabling hospital staff and local manufacturers to produce low-cost quality PPEs need to be supported by agencies.

A system of systematic digital triaging of all infectious diseases in all secondary & tertiary facilities need to be piloted and advocated in Indian context. This would give confidence and reduces the stress among health care workers and also stabilises the routine health care services as patients also have trust on the facilities. Structural alterations in health facilities need to be considered that smoothens the easy triaging. Health staff working in infectious diseases departments are required to be monetised accordingly and appropriate advocacy need to be done.

Facility development to have recreational services in health facilities to have individualized health, wellness and mental health interventions to address the physical and emotional tolls of COVID-19 and/or equivalent threats. These can be through organizational strategies to improve wellness for healthcare providers in areas of nutrition, exercise, mindfulness, sleep quality, and reducing burnout. These facilities can be close to high dependency/critical care services so that treating health staff can get these services as and when they intended to have. A high quality direct digital interface in adjoining areas of clinical services to talk and chat with family members and friends would help MHWs to feel they are closely with them.

Establish a real-time risk communication platform at state level that feeds and streams all messages, updates, orders, circulars on any public emergencies that reaches all peripheral facilities in real -time. These would help the front-line functionaries on timely decision making at their execution level that helps the system in containing/mitigating the risks. This platform can also be used for supporting the health care workers through encouraging and motivational programmes.



Job specific training to handle pandemics and any disasters need to be tailored with latest knowledge and skills and contextualised to the local requirements. In addition to disease knowledge and protective measures, capacity building initiatives to prepare MHWs for highly physically and mentally stressful events such as pandemics is necessary. This would include strengthening emergency preparedness and quick adaptation to disaster response in an organised manner. Such capacity building initiative should be tailored and conducted for all levels of staff of MHWs in order to achieve smoothest function possible under such situations

Implement quality telehealth in a variety of settings (primary & secondary) to limit the acute higher loads of patients leading to exposure to infection in health facilities. This would lessen the burden in higher level of facilities.

Once the current pandemic is over, affected and/or involved healthcare workers must be followed-up, supported, and long-term consequences should be appropriately treated. For the same, a task force maybe created to help mitigate physical, mental, social or economic effects on MHWs. State is required to have a team to follow the health of all health workers through face to face and online support that would encourage and motivate the MHWs further and helps in reducing the mental negative effects.

Way Forward for JICA

1. **Capacity building & Resilience Development among MHWs:** JICA to develop initiatives in developing resilience among MHWs for highly physically and mentally stressful situations such as pandemics. Since JICA is currently supporting few AIIMSs across the country, the same model may be scaled with to other premier institutions across the country with specially designed programmes on resilient pandemic management.
2. **Advocacy:** JICA to advocate Senior Government functionaries at both national and state level to strengthen skilled human resource adequately. This would help the health system to keep a vigil and control of dynamics of diseases in community as well as efficient management in facilities. JICA to advocate on importance of wellness of MHWs in pandemic management at top public health level.
3. **Technology and Knowledge transfer:** JICA may support by transfer of biomedical technologies and conducting collaborative research on early warning system that enables the health system to face public health emergencies of diverse quantum. These can be an exchange of knowledge and experiences between Indian & Japan. This could be on developing real-time surveillance and technology-based contact tracing.
4. **Mental Health Support:** JICA may advocate to the government to formulate sensitization sessions with leadership within facilities to mental health services and fulfill needs of staff during emergency response situations. This policy recommendation should include the provision of



psychological trainings and resource materials for leadership in enable better understanding for future needs of MHWs at a facility level. Such an intervention should be formulated in consultation with an organization/members experienced in mental health.

5. **Real-time Wellness Assessment of MHWs:** JICA to put efforts towards advocating a robust Monitoring Learning and Evaluation (MLE) framework on wellness of MHWs and towards mitigation measures during public health emergencies. JICA may support in developing such programmes at state level that helps the leadership to understand the unmet needs of the MHWs.

Challenges and Limitations

The purpose of this study is to provide insights rather than generalizable findings. The findings are cross-sectional, as the survey is done at one period, reflecting the current situation and problems in the context of COVID-19. Projecting and extrapolating the findings to a different setting and time in any form would be limited. Due to the rapidly evolving COVID-19 scenario, it would not be easy to establish specific associations and study interactions.

SARA visits were restricted in terms of their scope because of safety protocols, overstrained health system, and lack of time with health personnel but assessed with interactions with facility leads. Further, facilities and authorities were apprehensive of revealing detailed information of resource availability etc. to avoid scrutiny.

Due to changes in shifts and ad-hoc work designated to health workers, the interviews were often delayed. Most MHWs were hesitant in participating in the study or did not want to reveal the extent of issue that affected them from fear of seniors or further scrutiny. This was especially true for facility leadership and administration. Most health personnel had little time to spare, due to which the interviews had to be conducted in short period of time or through multiple follow-ups.

The secondary data (HMIS and facility's internal data) analysis was limited owing to data gaps, and lack of cooperation from authorities to share alternate data sources. The data is not shared in real time, and as of September 25th, 2021, the fields have only been updated till the May 2021.

Conclusion

Declaration of COVID 19 outbreaks as pandemic by World Health Organization on March 11, 2020, alerted all the countries across the globe to ramp up their public health infrastructure. While middle income countries tried to strengthen the existing system, India had encountered two major waves; one in early 2020 that had positioned health system into a spectrum of ambiguity and new knowledge in case management and disease control with shortages of infection prevention control equipment mainly PPE kits among health workers. Second wave in 2021 has posed the country with unprecedented spread of delta variant with acute shortage of supply of medical oxygen, key pharmaceutical agents, as well as scarcity and overload on existing human resources in the management of COVID 19. These complexities placed health care workers both in government and private sectors into stressed environment within both their workplaces and personal lives.

The present mixed method study is executed to understand the impact of COVID 19 on physical mental, psychological and social life among medical and health workers in the city of Mumbai, the economic capital of India. The methodology followed a mix of scoping review of existing literature, analysis of available secondary data and a primary study to explore the issues among health workers. From secondary data it was seen test positivity of COVID 19 in Mumbai was highest at 17% in second wave in April 2021 with mortality rate higher than the national average. These pandemic waves have impacted on regular delivery of routine health services across both public and private sectors which is mainly due to change in roles in the deliverables of the health workers and closure of facilities partially

for elective services in private sector. It has been observed that considerable decline in antenatal, intra natal, immunization, home based child care (24%), TB treatment completion (23%) and care for chronic diseases like diabetes (46%) and hypertension (37%) and acute health diseases (45%) were seen in lockdown period during first wave. In late 2020, the easing of lock down and regional restrictions led to resumption of routine care to normalcy. Triangulated results have shown that greater burden of work and mental impact in the first wave were owing to lack of preparedness, newness of the novel infectious disease and shortages of equipment and medication, and larger burden of mortality with unavailability of adequate medical oxygen in the second wave. Doctors and nurses bore the brunt of rerouting routine services to Covid care, with instances of doctors from other specialities being involved in the same. A lack of manpower was highlight across most facilities creating additional burden in managing high volumes of patients. Lack of PPE created an additional stress amongst MHW highlighted by nurses who felt they were not prioritised as much as doctors as caregivers. Staff rotations were highlighted both in the literature as well as in qualitative interviews for nurses. While this was noted within the scoping review to help alleviate fatigue, this was not highlighted as an effective measure within the interviews. The literature highlighted efforts around training and capacity building of MHWs to provide patient care services for non-COVID illnesses like diabetes, CVD etc, though this did not reflect majorly within the interviews, where instead a focus was given only to Covid related health service delivery. Overall, it is found that at an average MHWs reported moderate levels of burnout. Personal Burnout levels were low, but there was higher work-related burnout. Between the first and second wave burnout among MHWs had decreased, possibly due to increased familiarity with processes and experiences to draw from the first wave. It was also observed that higher proportion of respondents associated increased stress with a lack of time and multi-tasking while on service delivery. Literature also presented high levels of anxiety disorders amongst MHWs, ranging from 23.9% to 62%. Increased levels of anxiety amongst among nurses and FLWs was found during the pandemic, especially those with clinical duties. Depression was found to be prevalent as per the literature, ranging from ~27% to more than 50% of the participants. The scoping review highlighted a wide range of prevalence of stress (15-75%) depending on various factors such as duration of experience, daily professional working hours, availability and use of protective equipment. Studies identified reasons contributing towards increased anxiety and stressors as uncertainty over roles and responsibilities, chance of being quarantined, and individual's increased susceptibility to infection. Positive predictors of stress were inadequate supply of vaccines, lack of proven treatment regimens, extended and uncertain working hours, threat to personal safety from the infection as well as from violence towards health care professionals by the relatives of the patients missed with pandemic uncertainty. Physical impact due to the burden of providing care most commonly seen as headache, throat pain, anxiety, lethargy, poor appetite and insomnia are found to findings in literature whereas primary study pointed towards instances of dehydration, weakness, cramps in legs, body ache, loss of stamina, fatigue, weight loss and acne due to masks being the main physical manifestations. On logistics availability, all facilities mentioned facing shortages at some point of time in terms of human resources, drugs and supplies such as PPE etc. Suggestions and perceived solutions provided by MHWs included better emergency preparedness to reduce stress including increasing human resource



availability, training of response teams, provision of accommodation to stay separate from family and reduce fear-based stress.

It is recommended on assuring uninterrupted regular provision of drugs and key supplies towards safe and effective provision of care as well as lessening the mental burden on MHWs. Potential actions should include creation of a reserve availability of supplies such as personal protection equipment; potential drugs, oxygen and maintaining adequacy of beds that could be quickly transformed into acute care beds. In major cities like Mumbai, tertiary care facilities need to have self-reliance on crucial supplies like IPC equipment and oxygen. State Government/City Governance should have a core digital inventory of all emergency supplies in the main stores linked with consumer units. By enabling hospital

staff and local manufacturers to produce low-cost quality PPEs need to be supported by agencies. As there were apprehensions among health workers on risk of infection transmission within health facilities, a system of systematic digital triaging of all infectious diseases in all secondary & tertiary facilities need to be piloted and advocated in Indian context. This would give confidence and reduces the stress among health care workers and also stabilises the routine health care services as patients also have trust on the facilities. Structural alterations in health facilities need to be considered that smoothen the easy triaging. Health staff working in infectious diseases departments are required to be monetised accordingly and appropriate advocacy need to be done. Facility development to have recreational services in health facilities to have individualized health, wellness and mental health interventions to address the physical and emotional tolls of COVID-19 and/or equivalent threats. These can be through organizational strategies to improve wellness for healthcare providers in areas of nutrition, exercise, mindfulness, sleep quality, and reducing burnout. These facilities can be close to high dependency/critical care services so that treating health staff can get these services as and when they intended to have. A high quality direct digital interface in adjoining areas of clinical services to talk and chat with family members and friends would help MHWs to feel they are closely with them.

It also recommended to establish a real-time risk communication platform at state level that feeds and streams all messages, updates, orders, circulars on any public emergencies that reaches all peripheral facilities in real time. These would facilitate timely decision making at front-line functionary's execution level thereby helping the system in containing/mitigating risks. This platform can also be used for supporting health care workers through encouraging and motivational programmes. Development of new MHW community groups and encouragement of participation to allow connections and reduce feelings of isolation would help in socializing within MHWs groups.

A mandatory course with skill development to hone emergency preparedness need to be tailored at every facility level, along with facility level risk assessment of workplace need to be done analysing various parameters related to infection. In order to strengthen emergency response systems and subsequently the health system, supportive measures are needed to protect the backbone of the health system through real-time data analytics on disease surveillance system. Uptake and implementation of interventions and recommendations provided is essential in this context. It is also required to implement quality telehealth services in a variety of settings (primary & secondary) to limit the acute higher loads of patients leading to exposure to infection in health facilities. Job specific training to handle pandemics and any disasters need to be tailored with latest knowledge and skills and contextualised to the local requirements. In addition to disease knowledge and protective measures, capacity building initiatives to prepare MHWs for highly physically and mentally stressful events such as pandemics is necessary. This would include strengthening emergency preparedness and quick adaptation to disaster response in an organised manner. Such capacity building initiative should be tailored and conducted for all levels of staff of MHWs in order to achieve smoothest function possible under such situations.

Interventions to mitigate stress due to newness of a pandemic situation could include implementation of a buddy system where a part-time MHW is paired with a more seasoned colleague can help support part-time nurses during the pandemic crisis. Sensitizing leadership in health care on mental health services and needs of staff during emergency response situations can include the provision of psychological trainings and resource materials for better understanding for future needs. Once the current pandemic is over, affected and/or involved healthcare workers must be followed-up, supported, and long-term consequences should be appropriately treated. For the same, a task force maybe created to help mitigate physical, mental, social or economic effects on MHWs. State is required to have a team to follow the health of all health workers through face to face and online support that would encourage and motivate the MHWs further and helps in reducing the mental negative effects.



Annexure-I

Self-Administered Question List

Questions	First wave (%)					Second Wave				
	0	25	50	75	100	0	25	50	75	100
In general, would you say your health is	20.18	31.19	40.37	5.50	2.75	26.61	31.19	33.03	8.26	0.92
I seem to get sick a little easier than other people.	37.61	29.36	10.09	16.51	6.42	39.45	28.44	10.09	17.43	4.59
I am as healthy as anybody I know	33.94	50.46	9.17	1.83	4.59	37.61	45.87	10.09	1.83	4.59
How often do you feel tired	13.76	14.68	48.62	19.27	3.67	17.43	15.60	44.95	20.18	1.83
How often do you think: "I can't take it anymore"?	37.61	18.35	30.28	12.84	0.92	40.37	16.51	30.28	12.84	0.00
How often do you feel weak and susceptible to illness?	32.11	30.28	28.44	6.42	2.75	36.70	26.61	29.36	7.34	0.00
Personal Burnout Score	32.49					30.47				
Work Related Burnout										
Do you feel burn out because of your work?	26.61	24.77	29.36	18.35	0.92	29.36	22.94	28.44	16.51	2.75
Does your work frustrate you?	41.28	21.10	25.69	7.34	4.59	44.95	19.27	24.77	7.34	3.67
Do you feel worn out at the end of the working day?	25.69	15.60	31.19	16.51	11.01	29.36	15.60	30.28	16.51	8.26
Is your workload unevenly distributed so it piles up?	44.04	20.18	21.10	11.01	3.67	41.28	23.85	20.18	11.93	2.75
Do you get behind with your work?	37.61	25.69	23.85	6.42	6.42	38.53	26.61	22.94	6.42	5.50
Do you have enough time for your work tasks?	5.50	17.43	22.94	22.94	31.19	6.42	16.51	23.85	19.27	33.94
Do you have to keep your eyes on lots of things while you work?	4.59	12.84	9.17	26.61	46.79	5.50	11.93	10.09	23.85	48.62
Does your work put you in emotionally disturbing situations?	27.52	14.68	37.61	13.76	6.42	33.03	12.84	39.45	11.01	6.42
Is your work emotionally demanding?	27.52	18.35	29.36	16.51	8.26	27.52	18.35	29.36	14.68	6.42
Does your work have clear objectives?	34.86	39.45	11.01	5.50	9.17	33.94	42.20	8.26	5.50	10.09
Do you know exactly which areas are your responsibility?	41.28	33.94	11.01	3.67	10.09	43.12	34.86	9.17	3.67	9.17
Do you know exactly what is expected of you at work?	46.79	34.86	11.93	4.59	1.83	47.71	36.70	11.01	2.75	1.83
WRB Score	38.09					37				



Annexure-II



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APPROVAL DOCUMENT

DATE: 22.07.2021

Applicant: Dr. Sudeep Kumar Shetty, Sambodhi Research and Communications Private Limited

PROJECT TITLE: Study on the impact of COVID-19 pandemic on Medical Healthcare Workers (MHWs) in Mumbai city, India

IRB Number: 10010/IRB/21-22

Thank you for submitting the protocol Study on the impact of COVID-19 pandemic on Medical Healthcare Workers (MHWs) in Mumbai city, India

I am pleased to inform you that the above mentioned study has been approved by the Committee in accordance with the compliance of the Title 45, Code of Federal Regulations, sub-part A (Common Rule) of NIH.

All research activities must be conducted in accordance with the approved submission. It is your responsibility to fulfill the following requirements of approval:

1. Changes, amendments, and addenda to the protocol, informed consent, or other study materials must be submitted to the Sigma-IRB for re-review and approval prior to implementation.
2. Any unanticipated problems, adverse events, protocol violations, social harm, or any new information becoming available which could change the risk/benefit ratio must be reported to the Sigma-IRB.

The Sigma-IRB concluded that the Principal Investigator has taken sufficient safeguards to carry out the study. The Sigma-IRB approves the proposal for conducting the aforesaid study. This approval is based on your revised submission of application, study protocol, tools and consent forms and any deviation from this protocol would require further approval of IRB. This is valid for one year from the date of approval, mentioned geographical location and presented sample. After the completion of the study, please submit the study report to Sigma-IRB

Signature:
Dr U V Somayajulu (Member Secretary of Sigma-IRB)



Date: 22.07.2021

Dr. Sudeep Kumar Shetty

Date: 22.07.2021

References

Please follow this link for a detailed table on the references used for the scoping review

https://srcpl-my.sharepoint.com/:b:/g/personal/aditya_naskar_sambodhi_co_in/EbjJS3ykKJFvSxoAQi9gU8B6AIFDPE91GpvuZ8Fok9wmQ?e=YmNP2g

Annexure-III

Proceedings of Webinar:

IMPACT OF COVID 19 PANDEMIC ON MEDICAL HEALTHCARE WORKERS IN MUMBAI CITY, INDIA

22nd October 2021

DISCUSSION SUMMARY

A dissemination webinar on the “**Study on Impact of COVID -19 Pandemic on Medical Healthcare Workers in Mumbai City, India.**” was organised by Sambodhi Research & Communications in association with the Japan International Cooperation Agency (JICA) India, on 22nd October 2021 at 12:00 pm. The objective of the study was to generate substantial evidence on mental, physical, economic, and social impact of COVID -19 on MHWs during both waves of COVID-19 in Mumbai, Maharashtra, India.

44 participants attended the webinar, representing various organisations. Representative organisations included Tata Trust, UNICEF, IPPF, Clinton Health Access Initiative (CHAI), Jon Snow International, World Health Partners (WHP), Karnataka Health Promotion Trust (KHPT), National Institute of Mental Health & Neurosciences (NIMHANS), Sight Savers and Manipal Group.

The intention of the webinar was to disseminate the study results and recommendations from the project as well as discuss proposed recommendations and get additional inputs from experts. Dr Vaibhav Srinivasan, Manager at Sambodhi Research and Communications commenced the webinar with a welcome address, stressing the toll COVID-19 has taken on medical health workers (MHWs) both physically and mentally, pointing towards a need to assess impact of the pandemic on them and put forth mitigation measures.

Mr. Nagai Shinsuke, Senior Representative, JICA India Office

Mr. Nagai Shinsuke, Senior Representative, JICA India Office as the keynote speaker expressed how the COVID-19 pandemic has exposed gaps in the healthcare system which are not designed for this level of burden. He highlighted the extent of COVID in Maharashtra with over 6.5 million cases and accounting for 20% of all cases in India with the highest death rate in the state at 1.4 lakh. He further spoke about how MHWs are at the highest risk of contracting COVID-19 leading to exacerbated stress. This highlights the need to assess impact on psychological, mental, emotional, and socio-economic state of the MHWs during COVID in Mumbai and provide evidence-based recommendations.

He spoke about the agreement signed between Japan International Cooperation Agency (JICA) and the Government of India towards the COVID-19 Crisis Response Support Loan for Social Protection. Under this program, measures towards containment of COVID-19 and mitigation of its adverse socioeconomic impacts in India are being sought. Understanding the impact of COVID-19 on the medical fraternity and recommending countermeasures to relevant stakeholders to mitigate the impact of COVID-19 on the MHWs in both public and private sectors is an important part of the same.



The outcome of the study is to share recommendations to relevant stakeholders such as state governments and other policy stakeholders to strengthen health systems and ensure overall wellbeing of MHWs. The findings of this study will be used for JICA future assistance in health sector to build on initiatives to assist in formulating emergency response protocols, strengthening of infrastructure, enhancing technological knowledge sharing between both India and Japan and developing countermeasures to ensure overall well-being of medical healthcare workers in India.

Mr Aditya Naskar, Project Manager, Sambodhi Research and Communications

Mr Aditya Naskar, Project Manager at Sambodhi Research and Communications presented how the study was conceptualised and conducted. He presented how a resource constraint situation such as in the current pandemic leads to an increased susceptibility of mental, physical, and emotional impact on MHWs and how this study finds in place in recognising both clinical and non-clinical stressors. The rationale to conduct the study was presented highlighting the focus on Mumbai since the city has the lowest health worker/population ratio. Laying down the scope, objectives, and research questions, he explained the primary and secondary components of the study including the scoping review, analysis of publicly available data sources; qualitative interviews and self-administered questionnaires.

Dr Sudeep Shetty, Team Lead

Dr Sudeep Shetty, Team Lead, presented the results and recommendations of the study. He walked through the secondary data statistics wherein stark differences were seen between both waves with respect to testing, deaths for COVID-19 with highest death in June 2020. Delivery of Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH) services dipped during first wave and second wave with some bounce back between waves. Outpatient and inpatient service statistics were also provided including DOTS treatment for Tuberculosis, wherein pre lockdown coverage was not achieved across any secondary data findings, Qualitative and literature findings highlighted challenges and rerouting of care by MHWs. He then presented the self-administered questionnaire results wherein difference in burnout was seen by cadre and wave of covid. Doctors and nurses showed higher work related burn out levels, and levels were higher in first wave. Presenting findings of mental health impact on MHWs, he highlighted elevated levels of elevated stress levels, anxiety, fear, and mental fatigue from primary data. Primary reasons highlighted include long working hours, increased workload, and fear being infected and/or infecting family members.

Stress on the health system has severely impact MHWs physically. Working conditions of MHWs, demands of the job, and susceptibility to infection has resulted in insomnia, lethargy, loss of appetite etc. Increased instance of fatigue, exhaustion, and burnout, stemming from increased workload and the use of PPE kits. PPE kit usage further led to suffocation, dehydration, and skin conditions. Impact on social life covered few cases of discrimination, and MHWs having to deal with stressed and frustrated patients and their family members.

INTERACTIVE SESSION

1. *Within Mumbai availability of health workers and institutions is skewed in favour of several areas in contrast with slums like Dharavi and M East Wards. The health workers in least served areas have greater work pressure and stress. A question was raised by one of the participants on any observations on these intercity disparities.*

Answer: This was seen especially when interviewing frontline workers (FLW) such as ANMs, ASHAs and Anganwadi workers as well as in PHC set up in BMC. For them the impact was 2-fold. Firstly, increase in scale of testing and providing health services as well as now enumeration and keeping a vigil on them. There were 2 kinds of impacts- sheer workload and physically straining. Mental Health suffered related to work as facilitating a more reluctant population and trying to make them adhere to protocols. Secondly availability of services within urban slums in Mumbai has been difficult not only in terms of availability but also logistic required. Lastly, perception of high susceptibility to infection since these MHWs go into extremely congested areas with poor sanitation protocols. This was more so initially when less PPE kits available, it became even more difficult to go out and do duties. Due to bureaucratic pressure and self-work fulfilment the PPE kits were required all the more. There was hesitancy in communities and MHWs faced discrimination and signs of verbal aggression. Requirement to specifically cater to the needs of FLW going into slum areas is needed.

A rapid review of mental health impact on FLW in slums portrayed the emotional toll filling these workers. Other concerns of working in slums included slum dwellers indulging in clashes and violence despite strict law enforcement, also resistance to following protocol- cough etiquette, wearing mask, entering clinics one by one.

2. *Another question raised on whether the study based upon secondary data analysis ascertain differences between Mumbai and other Tier 2 and tier 3 cities or even rural areas vis a vis impact on health workers?*

Answer: The focus was to look at Mumbai but findings were compared to Maharashtra's national level. For example, the average positivity rate and death rate for Mumbai was much higher. Drop in institutional deliveries was also much higher for Mumbai compared to national level. If there is interest in looking at this analysis, it can be shared.

3. *Any data on healthcare workers acting as source of COVID -19 infection to their families and contacts? These can be stress enhancers.*

Answer: The evidence we have is anecdotal but some respondents got infection and had to be isolated. Some facilities had strict protocols to identify and isolate as soon as possible through regular and routine swab testing and temperature check. They were given accommodation and quarantine between shifts. Some cases of transfer of infection to family and provision of isolation. No case of serious illness in family. Measures caused stress since family may get infection or staying away from family for long time causes anxiety.

4. *COVID-19 is neither the first nor the last pandemic. In current millennium itself, WHO has already declared 6 public health emergencies of international concern. Next pandemic is certainly around*



the corner. Will the study favour making recommendations to national authorities for (a) having a national and state specific pandemic preparedness plan, (b) building national capacity to predict, detect, diagnose and respond through one health approach and finally, (c) significantly increasing public investment into strengthening health system which has been dismissal low till date.

Answer: We have tried to put our recommendations close to supporting MHWs within health system to improve their wellness and develop resilience to face future pandemics. We have to consider going beyond this pandemic and act with multipronged approach to strengthen health system in on all fronts. Presently, considering JICA's short term actions these recommendations have been given though there is a need for future focus.

5. *Were there any significant differences in mental health outcomes among different cadres of healthcare providers? And if yes, was this explored in qualitative analysis?*

Answer: Those attending patients, so doctors and nurses had highest burnout and impact on mental health. Secondly lab assistants who handled swab and testing had increased stress due to increased susceptibility to infection. The least stress was seen in administrative staff and class 4 workers. This shows that the degree of contact and engagement with infected patients is proportional to level of stress. Those in immediate contact had highest level of stress.

Mr. Kultar Singh, Chief Executive Officer at Sambodhi Research and Communications provided the key takeaway from the study. He expressed gratitude to MHWs work during the pandemic and stressed the importance of the study as well as enhancing resilience of MHWs. He further stated the scope to using technology for real time surveillance and tracing. Collaboration with JICA can include using technology as a fulcrum to drive change. He mentioned the use of sensitization sessions with leadership within facilities to mental health services for staff during emergency response situations. He mentioned how JICA with other stakeholders can put forth a comprehensive monitoring and evaluation framework to look at resilience at both health system and health worker level. There exists a gap at skills, human resources (HR) and infrastructure level. Investments are need to strengthen both skills and infrastructure. Given the collaboration between JICA and the Government of India, this could be an area where support can be provided for better future preparedness.

The Webinar was ended by Vote of Thanks given by Mr. Sudhanshu Malhotra Vice President, Sambodhi Research and Communications.

REC You are viewing Aditya's screen View Options

Study on Impact of COVID-19 Pandemic on Medical Healthcare Workers (MHWs) In Mumbai City, India

SAMBODHI JICA

Aditya

Mr. Aditya Naskar, Manager Sambodhi Research and Communications presenting the conceptualisation and description of the study

REC You are viewing Aditya's screen View Options

Program Scope and Objectives

To generate substantial evidence on mental, physical, economic and social impact of Covid-19 on MHWs during both waves of Covid.

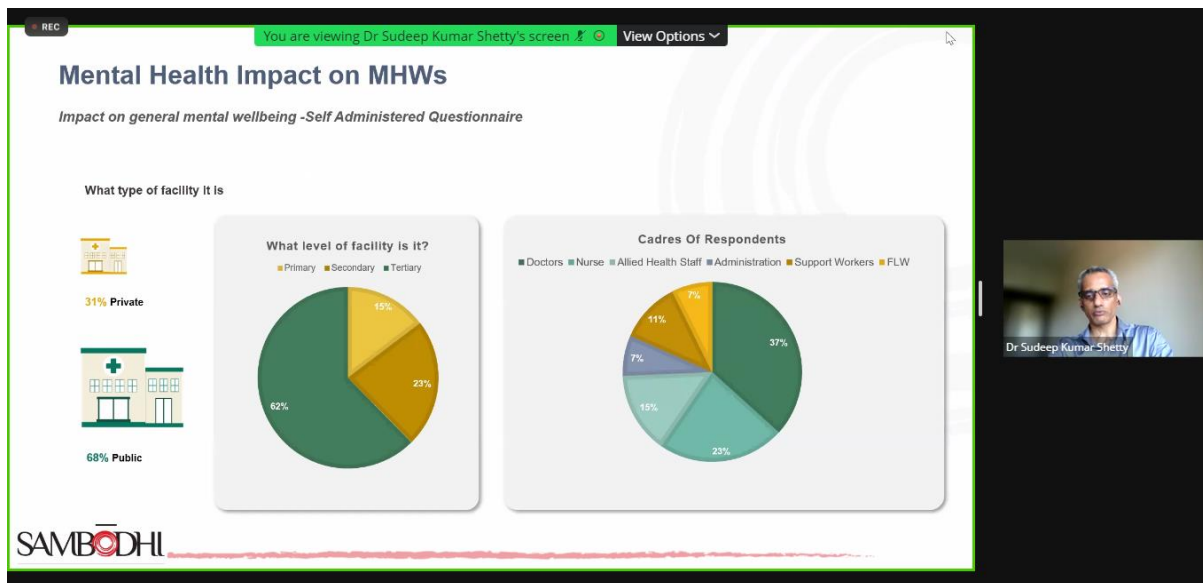
- To study the effect of COVID-19 and subsequent turn of events/strikes on physiological, psychological, and mental health and related aspects of MHWs in India.
- To study the effect of COVID-19 on the health system and the provision, availability and utilization of essential health services, resources, and equipment.
- To study the efforts (Change in service provision/utilization/collaborations/coordination/ adaptations etc.) and adaptations made by MHWs in providing health care and services to reach the demand.

SAMBODHI

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Aditya

Dr Sudeep Shetty, Team Lead presenting the findings and recommendations of the study



For Complete coverage of this webinar click on the link:

 [JICA Webinar.mp4](#)



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