

# Protecting Indian health workforce during the COVID-19 pandemic

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## ABSTRACT

Rapidly growing rate of infection among health workers during the current COVID-19 pandemic, is posing a serious challenge to global health systems. Lately, India is also witnessing an intensifying COVID-19 disease burden and its impact on health workers. This paper aims to discuss the challenges to health worker protection in India and the possible ways forward. Given the inadequate and unequally distributed healthcare workforce, it is highly essential for the country to strategize prompt measures for ensuring occupational health and safety of its health workers. Information for this paper were gathered by searching PubMed and Google Scholar databases using “COVID-19”, “Infection Control”, “Health worker”, “India” as search keywords in different combinations. In addition, websites of Government of India, relevant UN agencies and leading news agencies were also searched manually for related reports and publications. India must take timely measures in rapid manufacturing and procurement of essential personal protective equipment (PPE) to ensure adequate stockpiling to meet the rising demands. Comprehensive and repeated training with sharply focussed content including usage of PPE kits as well as active surveillance of adherence to recommended protocol are critical in protecting health workers especially the primary care physicians and frontline health staff from the deadly COVID-19 infection. The provision of psychological and financial support for health workers and their families is absolutely critical in building trust and dedicated work efforts by the health workforce for a continuous fight against the deadly disease.

**Keywords:** COVID-19, health worker, India, occupational health, pandemic

## Introduction

Globally, the novel coronavirus disease 2019 (COVID-19), which originated from Wuhan city in China, has now spread across to more than 210 countries. It has taken the shape of a global pandemic with closed to 9.6 million people suffering from this deadly disease and about 0.49 million fatalities worldwide by June 27, 2020.<sup>[1]</sup> Among the many hazardous impacts, the bearings of this global pandemic on the health care workforce have been substantial. As of June 3, 2020, the International Council of Nurses (ICN) estimated

that about 0.45 million health workers have been infected with COVID-19 globally<sup>[2]</sup> due to their constant exposure to infected patients,<sup>[3]</sup> which has led to loss of life for many. Developed countries like the United States, Italy and several European nations have reported a significant proportion of health worker infection and death while treating COVID-19 patients. In India, thousands of doctors, nurses, paramedical staff and community health workers have been infected with COVID-19 with more than 2000 health workers only from the national capital as of June 20, 2020.<sup>[4]</sup> With the existing insufficiencies in human resources for health in India, the growing number of COVID-19 patients is likely to pose an unprecedented burden on health care personnel.

It is crucial for any country to protect its healthcare personnel which are its most critical resources at the time of a pandemic.

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These skilled health human resources cannot be replenished urgently if the existing manpower succumbs to infection and death. With the increasing number of health personnel getting infected with COVID-19 disease, it is much needed for a country like India to ensure appropriate measures to protect its health care workers. This paper aims to discuss the challenges to health worker protection in India during this growing pandemic and the possible ways forward to ensure the safety of its health workers.

## Search Methods

Information for this paper were gathered by searching PubMed and Google Scholar databases using “COVID-19”, “Infection Control”, “Health worker”, “India” as search keywords in different combinations. In addition, websites of Government of India, relevant UN agencies and leading news agencies were also searched manually for related reports and publications. Published information no later than June 28, 2020 have been included in this paper.

## Deficient Infection Control Implementation

In India, besides chronic shortage of health workers, implementation of infection control policies as well as their practice in health facilities remains poor. India adopted the National Guidelines on Airborne Infection Control (AIC) in Health Care and other settings in 2010 with a specific focus on Tuberculosis (TB) prevention and control at health facilities.<sup>[5]</sup> Five years after the guidelines, a large-scale Indian study revealed very poor implementation of AIC practices with minimally developed administrative and environmental control standards at the health facilities.<sup>[6]</sup> Recent studies have also highlighted several deficiencies in the implementation of Infection Prevention and Control (IPC) measures in government and private hospitals in India such as insufficient training of staff, unavailability of protective masks, poor compliance to personal protective practices by health workers, inadequate disinfection and sterilization of equipment, lack of health workers surveillance mechanism, rare counselling of cough etiquette and sputum disposal at registration of hospitals.<sup>[7-10]</sup> Rapid spread of Nipah virus infections at the health facilities of Kerala state of India during 2018 can be another example of poorly implemented infection control measures.<sup>[11]</sup>

Only recently in January 2020, India has put forward a more comprehensive National Guidelines for Infection Prevention and Control in Healthcare Facilities.<sup>[12]</sup> Subsequently, the Revised Guidelines on Clinical Management of COVID-19, including recommendations for specific IPC practices, came on 31<sup>st</sup> March 2020.<sup>[13]</sup> The implementation of such guidelines at the health facility level is yet to fully assessed. However, due to the intensification of COVID-19 outbreak in India around the same time, an instant change in health worker behaviour for full and appropriate practice of IPC appears grim. A recent study examining Primary Health Centres (PHCs) in India during COVID-19 outbreak for their preparedness to provide

safe out-patient services revealed substantial infrastructural and infection control deficits such as poor ventilation, limited space and absence of separate entry/exit points and minimal airborne control measures.<sup>[14]</sup> While the constitution of infection control committees has been commonly found in many health facilities, their effective implementation remains restricted.<sup>[15,16]</sup>

## Shortage of Personal Protective Equipment

The shortage of personal protective equipment (PPE) is the most important impediment to ensure the safety of health care workers and has been reported in most of the affected countries. PPEs include respirator face masks, eye protection goggles/facial protection, face shields, clean, long sleeved gowns, and hand gloves. Studies in India before the onset of COVID-19 outbreak had revealed limited availability of N95 masks for use of healthcare staff even in high-risk zones of hospitals.<sup>[7]</sup> Accelerated burden of COVID-19 infection with the persistent dearth of PPEs has reportedly endangered the life of healthcare staff in hospitals in Mumbai, India.<sup>[17]</sup> Reports from various parts of India also suggest doctors treating suspected COVID-19 patients without masks or with less protective surgical masks and even sometimes masks made up of cloths and rainwear materials.<sup>[18]</sup> Many-a-time, the shortage of PPEs has compelled health workers into their reuse and extended use, which puts them at risk of infection.<sup>[19]</sup>

India's escalating number of COVID-19 infected cases is posing a very high demand for PPEs. Setting up a national and state level stock management network of critical PPE and other medical supplies can facilitate their progressive release to health care facilities while the pandemic accelerates.<sup>[20]</sup> Countries like Singapore and Taiwan have used these interventions effectively to ensure preparedness to fight the COVID-19 outbreak.<sup>[21,22]</sup> Investing in manufacturing, procurement, and stockpiling of necessary PPE supplies can help India avoid the crisis of jeopardizing its health workers life and safety.<sup>[23]</sup> It is also equally important for the government to maintain the ban on the export of PPEs throughout the crisis, although there was a reported delay in its implementation in the country.<sup>[20]</sup>

## Inadequate Training and Surveillance of Health Workers on Protective Practices

The effectiveness of PPE devices and IPC measures depends on its appropriate use. Active training of health workers regarding the recommended hygienic practices and barrier precautions is of utmost importance. As per WHO guidelines, systematic training for the use, removal, and disposal of PPEs as well as IPC practices before being exposed to COVID-19 patients are the rights of health workers.<sup>[2]</sup> Inadequacies related to the proportion of health workers trained as well as limitations in training content for proper practice of IPC have been commonly found in South Asian countries including India.<sup>[16]</sup> Previous studies from India have also reported lack of training in addition

to time constraints and excess workload restrictions contributing to sub-optimal knowledge and practice of infection control by health workers.<sup>[24,25]</sup> Another study conducted at 50 government and private hospitals in Southern India had revealed that only less than half of their staff were trained on infection control practices.<sup>[7]</sup>

There is an absolute need of continuous and mandatory training programs for health workers on IPC measures.<sup>[25,26]</sup> In countries like Japan, Singapore, and Hong Kong, rigorous training and adherence to IPC measures helped to limit COVID-19 infections to their health workers.<sup>[27]</sup> A rural Indian study demonstrated a significant association between training exposure of health workers with their better adherence to hand hygiene practices.<sup>[15]</sup> Systematic training to all health care staff including paramedical staffs, professionals working in other departments such as pharmacy, counselling, rehabilitation services, and health administration must be organized to train them with emergency care, proper use and removal of PPEs and IPC guidelines. Certification of these trainings should also be made mandatory for all health personnel in future. In addition to optimal training, continuous surveillance of health worker's adherence to barrier precautions and hygiene recommendations are essential to limit their exposure to infections. Earlier studies in India had recommended the establishment of continuous quality compliance for IPC measures as well as direct observation as effective methods of monitoring of such practices by health workers.<sup>[28,29]</sup>

### Shortage of Human Resource

Health system in India has always struggled with the chronic shortage of healthcare professionals. There are just 0.9 doctors per 1000 population in the country which is far less than countries that experienced high COVID-19 burden like Italy (4.1), USA (2.8) and China (2.0).<sup>[30]</sup> In addition, unequal distribution of health care human resources further aggravates the challenge. Only 40% of health workers serve people living in rural regions who consist of more than 70% of the total population in India.<sup>[31]</sup> Thus, it is most critical in India to engage its health personnel efficiently as well as protect the lives of its limited number of healthcare workers during the COVID-19 pandemic. Strategies like ad-hoc appointment of private sector health workers and engaging allied health professionals in emergency care after necessary training can be advantageous. Engaging a small group of health workers to manage COVID-19 cases is recommended to avoid disruption in the continuity of health services in case these health personnel get infected or need to be quarantined. Due to the higher susceptibility to infection, health workers more than 60 years of age and those having co-morbidities must be kept away from hospital premises. They could be engaged in tele-consultation, coordination, and administrative tasks from home.<sup>[32]</sup> Moreover, ensuring the health professional's willingness to work is essential. Trust in being protected is the strongest factor influencing the motivation of health workers at the time of pandemic.<sup>[33]</sup>

### Engagement of Community Health Workers (CHWs)

With the heavy in-flow of large number of migrant labourers post-lockdown to their home states, there was significant rise in need of health human resources in rural parts of the country. To address these needs, CHWs such as Auxiliary Nurse Midwives (ANMs), Accredited Social Health Activists (ASHAs) and Anganwadi Workers (AWWs) are actively being engaged in generating public awareness, contact tracing of detected cases and community surveillance activities.<sup>[34]</sup> However, lack of appropriate training, inadequate provision of PPE kits, stigmatization and even physical abuse have been reported to the community health workers in many Low- and Middle-Income Countries (LMICs).<sup>[35]</sup> Not only this poses heightened risk of CHWs for contracting COVID-19, but also of experiencing social and psychological trauma. In India, cases of COVID-19 infection to CHWs like ASHAs and AWWs have already reported in some states.<sup>[36]</sup> To ensure the health and safety of these frontline health workers, task-specific training including usage of masks and other protective measures; availability of PPE kits and other logistics; additional incentives; as well as psychosocial support system in required sufficiency must be made available.

### Sub-Optimal Personal and Environmental Hygiene

Despite the use of PPEs, infected surfaces and lack of proper hand hygiene expose health workers to COVID-19 infection. Poor hand washing practices by Indian health workers have been reported previously due to lack of time and shortage of hand washing materials.<sup>[15]</sup> Inadequate maintenance of social distancing and personal hygiene norms in many hospitals in India have led to the spread of infections to many health care staff.<sup>[32,37]</sup> Additionally, Coronavirus is known to survive on dry surfaces until a few days,<sup>[38]</sup> but disinfectant liquids can decontaminate the surface by killing the virus. Nevertheless, the environmental cleanliness of most public health facilities in India is usually suboptimal due to limited cleaning and visitor's poor sense of personal and respiratory hygiene. The 76<sup>th</sup> round of National Sample Survey had reported that only 36% of Indians wash their hands before eating and 26% after using toilet.<sup>[39]</sup> Usage of chewing tobacco (a common type of smokeless tobacco), and open spitting habits of people around common public places including hospital premises are also widespread. Verbal and pictorial reminders at the health facilities to educate people about giving away spitting habits as well as adhering to proper respiratory and hand hygiene must be adopted. Making alcohol-based hand disinfectants available to hospital visitor can also aid in people's hygienic behaviour. Hospital cleaners need proper training on decontamination measures of common places, infected patient rooms, isolation/quarantine wards, common toilets as well as health worker cabins and work spaces.<sup>[40,41]</sup> Moreover, a strong surveillance team must regularly monitor health facilities for adherence to infection control guidelines and other cleanliness measures with stringent penalties for violation.

## Risk of Accidental Infection Exposure

People with clinically mild or atypical/unusual symptoms go unnoticed in emergency care, out-patient and other departments<sup>[40]</sup> which puts the primary care physicians and other healthcare staff at risk of unexpected infection exposure. This was the reason for the spread of the infection to many hospital staff in India who were treating undiagnosed COVID-19 patients in general wards.<sup>[32]</sup> In a private hospital in Mumbai, about 40 nurses recently got infected with COVID-19, reportedly from 70-year old asymptomatic patient admitted to Intensive Care Unit (ICU).<sup>[17]</sup> Hence, it is essential for health workers to be provided with adequate protective gears such as N95 masks, even if they work in primary care facilities, out-patient services or other non-emergency departments. Moreover, targeted screening and testing of high risk patients for COVID-19 can also be carried out in other departments of the hospital in high prevalent localities for early detection and prompt action.

## Need for Physical and Mental Support

Considering India's low doctor to patient ratio, increase in COVID-19 patient load can be extremely overwhelming for its health personnel. Provisioning timely rest breaks, healthy food, and allowing time-off for critical personal needs such as child care or elderly care are important. Scheduling a roster for healthcare staff can ensure a balanced workload and rest periods for health workers.<sup>[40,42]</sup> In addition, increase in infection rates among their peers amplify anxiety level among health workers.<sup>[33]</sup> There is further a continual concern about transmitting infection to their family members. In some instances, Indian doctors have also reported receiving eviction threats from their house owners due to stigma and fear of getting infected with COVID-19.<sup>[18]</sup> Such action was later strongly discouraged by the government to ensure protection and re-establish trust among health workers. Mental support and encouragement services must be made available to health workers by designated counsellors and psychologists to help relieve their stress and mental fatigue.<sup>[43]</sup> Furthermore, clear communication related to staff working hours and facilitating mutual encouragement among peer health workers can also be advantageous.<sup>[42,43]</sup>

## Additional Essential Support - Incentives and Rewards

The motivation level of health workers can be boosted by appreciation for their dedicated efforts and rewards for exceptional contributions. Additional incentives as well as insurance protection for health workers and their family members have also been used as effective strategies to ensure health worker willingness to work during this time of crisis. Many states in India have already announced insurance protection for health workers to boost their morale.<sup>[44,45]</sup>

## Conclusion

Health workers are the most affected community during pandemics especially those working in the frontline and primary

care. The unprecedented scale of COVID-19 has caused a substantial number of infections and deaths among healthcare workers. It is essential for India to equip itself with adequate precautionary measures for health worker protection. Ensuring adequate manufacturing, supply and stockpiling of PPEs and essential medical equipment like ventilators to health facilities are of utmost importance. Further, systematic and repeated training as well as certification of medical professionals working in all departments including paramedics and healthcare support staff must be prioritized with comprehensive content to impart optimal knowledge of PPE usage, hand, and environmental hygiene. These must also be followed with active monitoring and surveillance to ensure adherence to such practices. In addition, exposure of health workers, especially the primary care physicians and frontline health staff, to infections can be curtailed by ensuring their appropriate usage of PPEs while treating asymptomatic or sub-clinical patients. Community health workers engaged in rural areas must also be supported with essential protection logistics, training and support services. Furthermore, adequate rest, mental support, family protection, rewards, and appreciation will facilitate health worker well-being and contribute towards high quality patient care. Timely planning and intervention can help India in protecting its health warriors for a longer and stronger fight with the upcoming health calamity.

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## Conflicts of interest

There are no conflicts of interest.

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