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Original Research Article

Strengthening of Health Workforce towards COVID-19 Pandemic Preparedness in Assam Medical College and Hospital, Dibrugarh: Action Research

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Abstract

Introduction: There was an urgent need for a trained healthcare workforce during the COVID-19 pandemic for the care of patients. Quality education and training were required to strengthen the health workforce and ensure that they are confident and skilled in the delivery of care in COVID Care Centers, Dedicated COVID Health Centers, and Dedicated COVID Hospitals.

Objective: To capacitate the different categories of health workforce by different training modalities conducted for COVID-19 pandemic preparedness in Assam Medical College and Hospital, Dibrugarh.

Material and Method: This capacity building program was initiated in 2020 and offered to the health workforce of 5 districts in Upper Assam. Quality education and training were given through hands-on training, video conferences, webinars, and slide presentations. An online survey for the effectiveness of the training was assessed. The training programs were coordinated by the Department of Community Medicine, Assam Medical College and Hospital, and data analysis was done for the health workforce trained in different modalities, and results were presented as percentages.

Results: Overall, 4827 health professionals from 5 districts in Upper Assam were trained. Out of these, 10.31% (498) were faculty members of the medical college, 19.43% (938) were medical officers, 25.87% (1249) were nursing staff, 8.92% (431) were medical students, and 28.42% (889) were other paramedical staff.

Conclusion: The capacity building of a sustainable and strong health workforce was an urgent need during the COVID-19 pandemic, which proved feasible and effective in tackling the public health emergency.

Keywords: COVID-19, Pandemic Preparedness, Strengthening The Health Workforce.

Introduction

A new variant of pneumonia was reported to cause respiratory infections in Wuhan city, China, in late 2019. The COVID-19 pandemic was much more than a health crisis, which required a whole-of-community participation and a full-fledged government response. The global spread of the virus had disrupted the global economy, overwhelmed health systems, and led to widespread social disruption.[1] The condition was named by WHO as COVID-19 in February 2020, which stands for coronavirus disease 2019.[2] As of 5th June 2022, over 529 million people had suffered from the deadly disease, and over 6 million deaths have been reported globally.[3] While vaccination had commenced as an effective preventive measure in various countries, new variants and outbreaks continued to emerge. At the same time, the worldwide distribution of COVID-19 vaccines is marred by challenges of equity on top of logistical complications. Therefore, millions were at risk of infection, faced significant morbidity, lost their livelihoods, and faced an uncertain economic outlook. The capacities to prepare and respond during the COVID-19 pandemic had challenged local, regional, national, and global efforts. The health systems across the world had taken it upon

themselves to bring forth different interventions to fight the virus since its detection. The various national and international strategies taken to control and reduce viral transmission were widely debated. [4,5]

In most countries, COVID-19 had spread rapidly among the health workforce as they had been those frequently exposed to the coronavirus infected patients, with data showing that they had been disproportionately infected and affected by the COVID-19 pandemic.[6] The health workforce in hard-hit countries struggled with long working hours, exhaustion, and high psychological stress during the first wave of the epidemic due to overburdened healthcare systems. Shortages were caused by quickly disappearing supplies, widespread lockdowns, and a feeding frenzy for personal protective equipment (PPE) on the open market.[7] The health workforce had experienced low staffing levels, mainly among the nursing staff, and also uneven geographical distribution. There were acute shortages of sufficient personal protective equipment (PPE), limited testing capacity, inadequate training for COVID-19 preparedness, social discrimination and attacks, and poor mental health.[8] The healthcare professionals frequently had to provide care for patients who had a COVID-19 infection that was either suspected or confirmed. During the early stages of the pandemic, this led to a rise in the danger for healthcare professionals.[9–11]

The second wave began in the middle of March 2021, and on April 9, India reported the greatest number of cases (144,829).[12] The number of COVID-19 cases had suddenly increased, and this increase had turned out to be considerably more frightening and destructive than the initial wave.[13] Due to a lack of resources needed to fight the COVID-19 pandemic, the Indian healthcare community has experienced significant difficulties. A greater number of moderate-to-severe COVID-19 infected cases, which necessitated immediate hospital admission, had been reported during the second pandemic wave.[14] The health of health care workers had suffered as a result of the abrupt rise in hospital admissions and increased demand for medical care. The health and welfare of doctors, who had been mostly ignored in the melee, had been seriously impacted by increased working hours and frequent contact with seriously ill patients.[15] As the health workforce took the lead role during vaccination drives, they were also vulnerable to COVID-19 infection.[16] During the third wave of the COVID-19 pandemic, caused by the super spreader omicron variant, there was a shortfall of at least 20% of the health workforce in most of the health institutions in India. The two key factors for this shortfall were that there was a rise in COVID-19 infection among the health workforce and a delay in admission of postgraduate students who are the backbone of the routine operation of a hospital.[17] Most countries reported giving some form of financial support to their health care workers, like monetary incentives, bonuses, tax benefits, insurance, overtime pay, meal allowances, and classification of their infections as an occupational injury or disease, and declaring work-related cause of death. Initiatives were taken to make psychological support available for their health care workers, such as counselling and trauma support, to maintain good health, morale, and well-being. Frontline health care workers and their family members were especially vulnerable and were targeted for psychological support. Some countries launched social media campaigns that motivate and encourage people to show their admiration, gratitude, and pride for the health workforce to promote solidarity.[18]

In order to manage COVID-19 infected patient, the health workforce from all fields had to acquire new techniques, such as how to properly wear personal protective equipment (PPE) and handle critically sick patients receiving ventilator assistance.[19,20] It was required to immediately train a sizable number of health workforce to be on the front line to ensure appropriate resource utilization and staffing. Training and education ideally need to be ongoing and prepared ahead of time to be ready for a new infectious threat. Specialized training empowered the health workforce with the information and abilities needed to safely care for patients, to reduce outbreak-related mortality, and to prevent and manage nosocomial infections.[21–23]

A key factor necessary for the success of public health systems is the development of a committed, knowledgeable, skilled, and well-prepared public health workforce.[24] Therefore, there was an urgent need for a healthcare workforce during the present COVID-19 pandemic for the care of patients. To strengthen the health workforce, quality education and training were required so that they are confident and skilled in the delivery of care in COVID Care Centers, Dedicated COVID Health Centers, and Dedicated COVID Hospitals.

Objective

To capacitate the different categories of health workforce by different training modalities conducted for COVID-19 pandemic preparedness in Assam Medical College and Hospital, Dibrugarh.

Material and Method

This capacity-building program was initiated in March 2020 as action research and offered to the health workforce of 5 districts in Upper Assam. All districts of Assam were allotted to different government medical colleges for capacity building in COVID-19 pandemic management. In response to

the advisory from the Mission Director, National Health Mission, Assam, the districts allotted to Assam Medical College and Hospital were Dibrugarh, Tinsukia, Lakhimpur, Dhemaji, and Charaideo. Hence, a total of 5 districts of upper Assam were under the mentorship of Assam Medical College and Hospital, Dibrugarh. A team of trainer of trainers (ToT) was constituted with specialists from Community Medicine, Microbiology, General Medicine, Pediatrics, and Anesthesiology. This team provided quality education and training to the district-level health workforce through hands-on training, video conferences, webinars, and presentations. The state health authorities of different districts, through the office of the respective Joint Director of Health Services, were informed to implement a mutually feasible training schedule.

The training programs were designed to accommodate all categories of health workers on different days for each district. They were coordinated by the Department of Community Medicine under the supervision of the Principal-cum-chief Superintendent, Assam Medical College and Hospital, Dibrugarh. Different components of COVID-19 pandemic preparedness training were dealt with by the respective faculties of the departments of Community Medicine, Microbiology, General Medicine, Pediatrics, and Anesthesiology (Table 1). Ethical clearance was taken from the Institutional Ethics Committee (Human) of Assam Medical College and Hospital, Dibrugarh, before the commencement of the study.

Phase-wise refresher training for handholding of the district-level health workforce continued up to the month of February 2022. Based on the daily attendance recorded during the training sessions of different categories of health workers of all 5 districts, the total data was generated.

The study period was from October 2021 to February 2022. An online survey for the effectiveness of the training was assessed by creating a Google form and sharing it in different official WhatsApp groups of the 5 districts. Data analysis was done for the health workforce trained in different modalities as well as for the effectiveness of the training using Microsoft Excel 2019 MSO (Version 2303 Build 16.0.16227.20202) 64-bit [developed by Microsoft Corporation, Redmond, Washington], and results were presented as percentages.

Results

Overall, 4827 health professionals of 5 districts in Upper Assam were trained from 30th March 2020 to 23rd May 2020. Out of a total of 4827 health professionals, 577(11.96%) were from Tinsukia, 606(12.55 %) from Dhemaji, 351(7.27%) from Charaideo, 454(9.40%) from Lakhimpur, and 2839 (58.81%) from Dibrugarh. Out of these 498(10.31%) were faculties of the medical college, 938(19.43%) medical officers, 1249(205.87%) nursing staff, 431(8.92%) medical students, 889(18.41%) other paramedical staffs, 256(5.30%) laboratory technician and 566(11.72%) were 4th grade workers. [Fig 1]

Refresher training was conducted in two phases from May 2020 to February 2022, in which 645 health professionals were trained. The first refresher training covered 119 health care workers of Dibrugarh district from 4th to 28th May 2020, consisting of 67(56.30%) faculty/doctors'/ medical officers, 29(24.36%) nursing staff, and 23(19.32 %) ward boys/ward girls/cleaners/grade 4 workers.

In response to the revised guidelines from Government of India for management of COVID-19 among children and adolescent below 18 years, the second phase of refresher training was organized, which was attended by 526 health professionals from 27th January 2022 to 11th February 2022 consisting of 60(11.40%) doctors/medical officers, 137(20.04%) nursing staffs, 169(32.12%) B.SC nursing students, 55(10.45%) multi-purpose workers, and 105(19.96%) community health officers (CHO).

Out of total 526 health professionals 382(72.62%) were from Dibrugarh, 107(20.34%) Tinsukia and 37(7.03%) from Charaideo. [Fig 2] Hands-on ICU training was given to 478 health professionals of Assam Medical College and Hospital of Dibrugarh district from 17th May 2021 to 24th May 2021. Out of these 30(6.72%) were faculties, 395(82.63%) medical officers, 50(10.46%) B. Sc Nursing students and 3(0.62%) nursing staff. [Fig 3] From the online feedback survey, 99.12% (127 out of 128) of respondents reported having benefited from the training, and 53.12% (68) and 69.53% (89) of trained health professionals worked in COVID ICU and COVID wards, respectively.

Table 1: Components of COVID-19 pandemic preparedness training:

Department of Community Medicine	
1. Case definition 2. Modes of transmission 3. Testing guidelines 4. Quarantine and Isolation 5. Transport by ambulance 6. Dead body management	7. Screening 8. Triaging 9. Discharge policy 10. Pregnancy guidelines 11. Guidelines for home isolation of very mild/ pre-symptomatic COVID-19 infected patients
Department of Microbiology	
1. PPE, including rational use of it during care of both COVID-19 and non-COVID-19 infected patients 2. Disinfection	3. Biomedical waste management for COVID-19 infected patients 4. Sample Collection
Department of Medicine	
1. Treatment guidelines	
Department of Anaesthesiology	
1. ICU training a. Oxygen therapy, b. Face mask, c. Non-invasive ventilation d. Intubation	
Department of Paediatrics	
1. Management of Paediatric COVID-19 infected patients.	

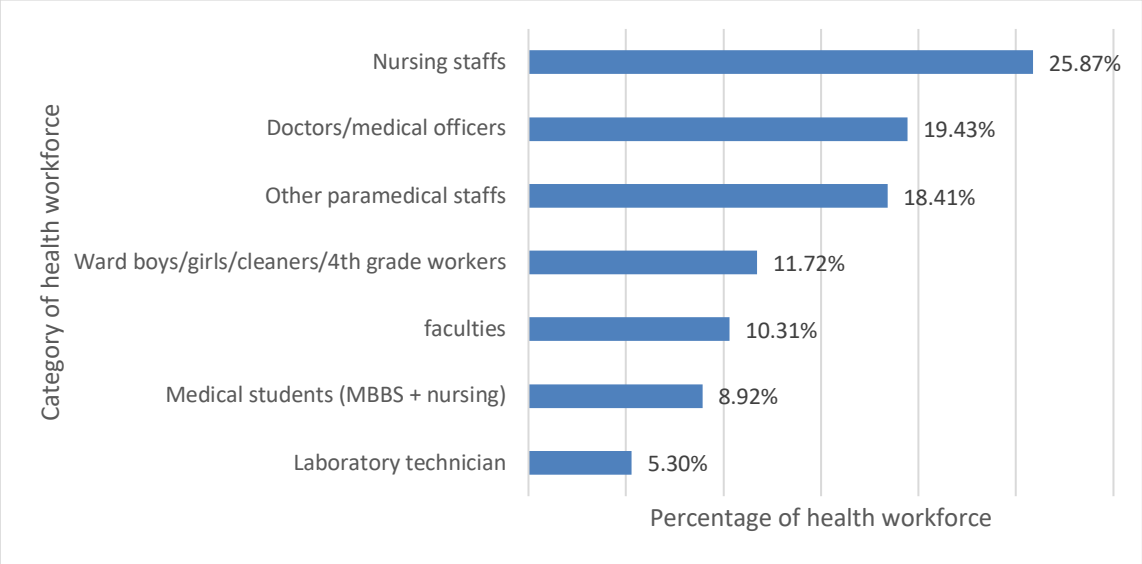

Figure 1: Training of health workforce for management of COVID-19 infected patients (n=4827):

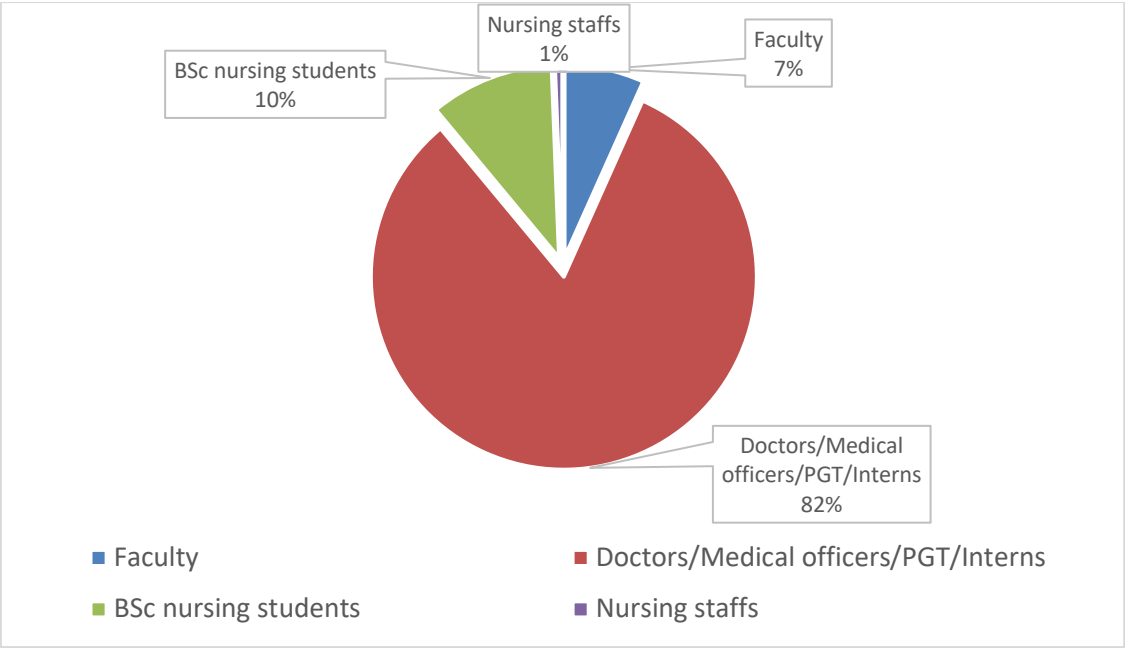

Figure 2: ICU training of health workforce for management of COVID-19 infected patients (n=478):

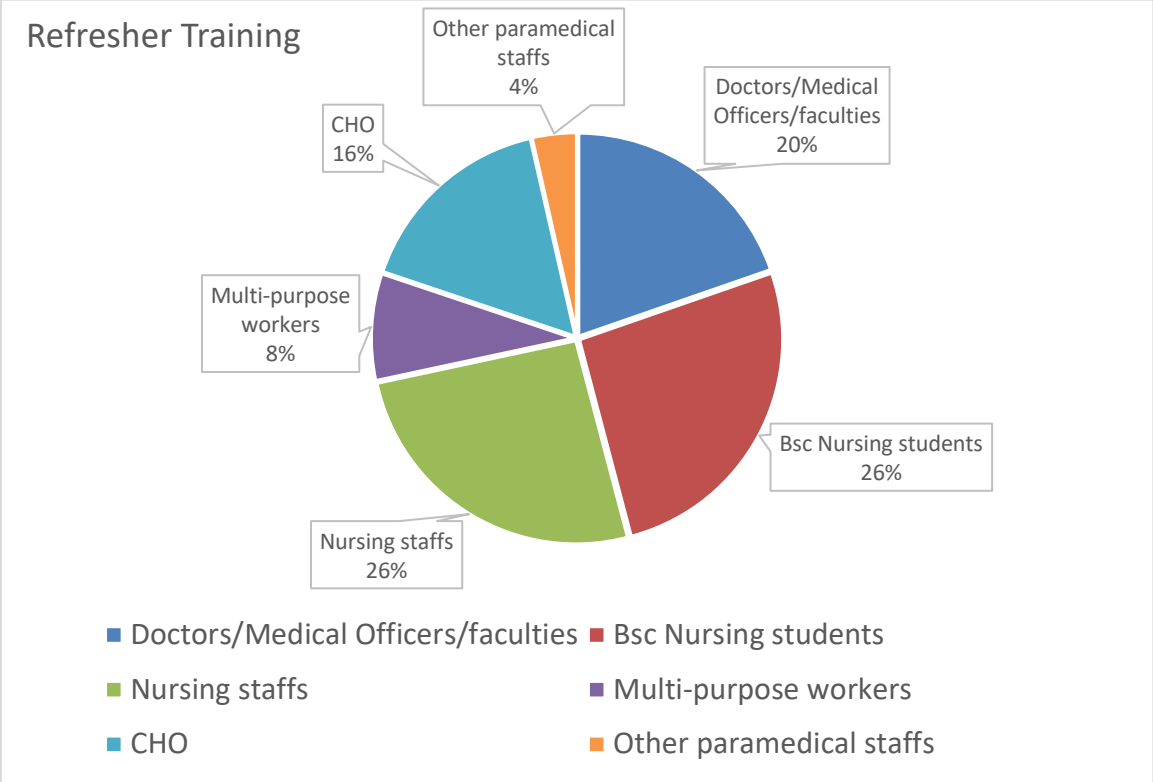

Figure 3: Refresher training (2 rounds) of the health workforce for management of COVID-19 infected patients (n=645)

Discussion

The COVID-19 pandemic served as a testament to a country's health workforce preparedness against a pandemic threat. Many countries have managed to tackle the pandemic with their available resources by increasing the health workforce, as seen in Bangladesh and Ghana.[25–27] Also, Ghana incentivized its health workforce through tax waivers.[28] The health workforce of the 5 districts included Medical and Health officers (MBBS) as well as postgraduate specialist cadre doctors from district hospitals, for whom tax waiver and medical reimbursement could be an incentive in the pay structure. The health workforce of South American countries has been trained to face the health crisis, according to their specific reality, potentialities, and

capabilities.[29] Even though the health workers have adapted themselves to the unprecedented context, most frontline workers lack the expertise in managing infectious diseases.[30] For enhanced pandemic response, it is essential to appropriately train these staff, together with improving their working conditions.[31,32] It is also essential for the health workforce to be updated with recent management strategies as necessitated by the evolving nature of the virus. During the COVID-19 3rd wave, mainly attributed to the Omicron variant, the Ministry of Health and Family Welfare, Government of India, shared a revised comprehensive guideline for the management of COVID-19 infection in children and adolescents below 18 years.[33] In the present study, it was found from an online survey that out of 128 health workers, 53.12% (68) trained front-line workers were working in the COVID ICU, and 69.53% (89) in dedicated COVID wards. Our study included health professionals and allied medical services like lab technicians, 4th-grade workers, and helper staff to ensure a well-equipped workforce. The present endeavor emphasizes the need to capacitate the primary caregivers, namely the multi-purpose workers and the community health officer, so that the community benefits at large. WHO has recognized this need and has set policy and management guidelines for the health workforce in response to the pandemic. The organization has stressed building the capacity of health workers through competencies. The present study focuses on the competencies as laid down by WHO to train the front-line workers through guidelines and standard operating procedures developed by the nation.[34]

In addition, supportive supervision was done through periodic refresher training to include new guidelines and management procedures. The training included hands-on training on PPE and management of the sick with demonstration of intensive care procedures. Apart from physical training, in places that could not be reached due to imposed restrictions, video conferences, webinars, and presentations were conducted. At the end of the study, a total of 127 out of 128 participants responded to the online feedback survey, having benefited from the training.

Limitation of the study: The criteria for selection of health workers by the respective district authority were unknown, and only those selected participated in the training sessions. The utilization status of the trained manpower in the respective districts with reference to the capacity building of their health workforce was also not known. There was a poor response to the feedback from participants in the online assessment.

Conclusion

The present study thus emphasized the need for capacity building and supportive supervision to tackle the COVID-19 pandemic. Periodic training and re-training were helpful, particularly when the fight was against a novel virus. It improved the motivation as well as raised the morale of the health workforce to tackle the pandemic with the resources at hand. The health workforce shortage could be effectively managed by capacity building for multitasking during the pandemic.

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