COVID-19 Essentials: Preparing Health Care Professionals before the Pandemic Spread in Kerala, India

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Abstract

Background: In Kerala, an Indian State, COVID-19 treatment was restricted to government hospitals till the first week of August 2020. There was a suggestion to involve private hospitals if the disease spreads fast and wide. Three quarters of the healthcare delivery in the state is by private health care providers.

Methods: The hospital administration decided to train different levels of health care workers (HCW) in caring COVID-19 patients along with measures to remain safe from the disease. *This was* a mandatory two hours online training session covering the necessary topics as per the Guidelines of World Health Organisation (WHO) and Indian Council of Medical Research (ICMR). Post test was conducted based on the knowledge acquired during the programme, general awareness as a medical professional and media reports that a medical personal should follow.

Conclusion: The response from doctors was 73.7% (out of 559).More response was from the interns (96.4%). All the respondents appeared for the post test and 93.4% secured marks above the cut off level of 75%. The participation and high percentage of success rate shows the interest of medical professionals to step up their skill, especially when they face a new challenge.

Keywords*: COVID 19 essentials, health-care preparedness, Continuing Professional Development programs, public health approach on COVID 19.*

Introduction

The Corona Virus Disease of 2019 (COVID-19) and its impacts confronts all with unpredictable, disruptive situations which have changed daily lives, economies, political decisions and healthcare system. The healthcare workers are in the forefront of the battle to treat the patients as well to prevent the transmission, putting themselves at high risk. WHO says that 10% global infections accounts for health workers.[1] Amnesty analysis reveals over 7,000 health workers have died from COVID 19 by August.[2] In United States of America (USA) over 1,000 health workers died of this pandemic disease by the end of August.[3] An earlier report from China by the middle of February showed that 1,716 health workers were infected and six died of this disease.[4] In India 87,000 health workers were infected with COVID 19 and 573 died by August 2020.[5] Under these circumstances the safety of health-care workers must be ensured. Health-care workers, unlike ventilators or wards, cannot be urgently manufactured or run at 100% occupancy for long periods. To boost them to tackle the situation most judiciously is the need of the hour.

Since the first case reported from India[6] on 30th January 2020, the country has reported over 50 lakhs patients and 75,000 deaths by the end of August 2020. In the state of Kerala treatment centres for COVID-19

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were limited in Government hospitals. However, it was felt that if the disease progresses, private sector hospitals would also have to be involved at some stage. This was more so as the private sector contributes 75.8% of health care delivery in the state.[7]

With legacy of poor man's hospital and commitment to service with love, this hospital administration decided to train different levels of Health Care Workers (HCW) in caring COVID-19 patients along with taking measures to remain safe from the disease. In the event of a surge in COVID-19 cases all the medical personnel have to be equipped with the current protocols, treatment guidelines, testing methods and the arrangements made in their institution. Besides social distancing, hand washing and use of face masks broadly meant for general public, the need for training HCW in Infection Prevention and Control (IPC) in health care setting are highlighted by World Health Organisation (WHO).[8]

A medical board was constituted in our hospital to lead the COVID-19 care related activities. As per their decision, training programs were started from first week of April, the early part of pandemic outbreak in the state. This was a mandatory online training session covering the necessary topics as per the Guidelines of WHO and Indian Council of Medical Research (ICMR). This was conducted by Hospital Infection Control Committee (HICC) as COVID-19 preparedness. *The training for doctors was online to ensure maximum reach maintaining social distancing and it included faculty, residents and interns.*

The experiences and outcome of the training for doctors were evaluated and reported here. The results will form baseline to make further improvements of the program and to note the good practices when actual service starts. The purpose of this article is to share the findings in academic circles of similar settings through scientific literature.

Methodology

Online training modules were prepared by HICC and Community Medicine Department, in a tertiary health care centre in Central Kerala, India. The content details and resource persons are given in table1. The session was for 2 hours with 8 modules and 9th module was post test (table 2) consisting of 24 questions (Google-form). Seventy five percent was the cut-off for successful completion. The program, named COVID-19 essentials was implemented and monitored by Human-Resources (HR) department of the institution.

A formal invitation was sent to all faculty, residents and interns by the Director on April 9th of 2020. The training materials were uploaded on YouTube and link was sent to each prospective participant by the department of Electronic Data Processing (EDP). The classes could be attended as per convenience of the participant. However all were requested to undergo the program on or before 12th April.

A second set of emails were sent to the prospective participants again as a reminder as well as with an extension of completion date as 14th April 2020. Third set of emails were also sent on 18th April 2020 to the new house surgeons directing them to complete the training and the post test at the earliest. The response from the participants are tabulated and presented.

There was no pre-test as the purpose of the program was enhancing the preparedness of HCWs in managing Covid-19 patients. Post test was done to measure the amount of knowledge transfer occurred.

Table.1:COVID-19 Essentials – course contents

Session	Topic	Resource person	Duration in Minutes
1	Introduction	Director	1:15
2	Hospital preparedness	Medical superintendent of Hospital	2:57
3	Epidemiology of COVID 19	Department of Community Medicine and Epidemiology	11:43
4	Clinical features, management and prophylaxis	Department of General Medicine	18:15
5	Sample collection & Diagnosis	Department of Microbiology	14:37
6	Infection prevention& Use of PPE	Hospital Infection Control Committee	16:00
7	Blue print of Fever clinic	Department of General Medicine	8:28
8	Triage at Hospital Casualty	Department of Emergency Medicine	6:22
9	Post test	Human Resource Department	

Table 2 The salient features of the post test questions includes the following apart from the questions to assess the category of the respondents.

1	Which is a high risk contact, how tested, COVID 19 hotspots and period of quarantine to different categories.
2	Regarding antibody detection tests and confirmation in the diagnosis of Covid-19
3	Category B symptoms, testing strategy for category B and C cases.
4	The proposed location for fever clinic in the institution, the mainstay of diagnosis in Covid19.Some puzzles like the following to comment
5	The red flag signs in a child suspected of covid-19
6	A young patient with acute respiratory infection symptoms, radiographic features of viral pneumonia and complete blood count showing leucopenia should be tested for COVID 19?
7	A 29 year old male with c/o mild sore throat and history of travel from Bengaluru (a city from other state) five days back came to Emergency Department, what to do the patient
8.	General question of helpline numbers and COVID related websites.

Results

There were 559 doctors eligible to participate. Among them 412 (73.7%) responded (Table 3). More response was from the interns (96.4%). In the category of 'other doctors' the response was hundred percentage, but was a small group. All the respondents appeared for the post test and 93.4% secured marks above the cut off level of 75%. Those who scored above cut off level were 96.8% among interns, 91% among faculty and 89.1% among residents.

Table 3: Responses of doctors according to their categories

Particulars	Faculty*	Residents**	Interns	Other*** Doctors	Total
	SR & above	JR, PGs & Fellows	House Surgeons		
	N (%)	N (%)	N (%)	N (%)	
Total number in the category	216(38.6)	135(24.2)	195(34.9)	13 (2.3)	559
Number of mails sent	216(100)	135(100)	195(100)	13(100)	559
Number of respondents who participated	139(64.4)	83(61.5)	188(96.4)	2(15.4)	412
Number of respondents who participated in post test	139(100)	83(100)	188(100)	2(100)	412
Number of respondents who scored above cut off mark in post test	127(91.4)	74(89.2)	182(96.8)	2(100)	385

*SR & Above- Senior Residents, Asst Professors, Associate Professors and Professors

**JR, PGs & Fellows- Junior Residents, Post Graduate Medical Students and fellowship candidates in specialty departments.

*** Doctors serving legal services, quality assurance and charity

Considering the relatively small number in categories and content of the classes were interlinked, item wise calculation of responses was not attempted.

Discussion

Preparedness planning is essential in order to respond effectively during outbreaks and epidemics. Health-care workers who are at the frontlines in such pandemics are the most vulnerable. Extra measures may be needed for health-care preparedness, to reduce morbidity and mortality. WHO and Indian Council of Medical Research have published protocols and WHO offers online programmes for empowering the healthcare professionals.[8,9] At the time of our program, no published reports of similar studies were available from south Indian states.

Reports appearing in mass media and scientific journals as well as those in social media alerted the community of medical professionals about the possible wide spread of an unusual virus hitherto unknown.[10,11] There was a Nipah outbreak in hilly terrain of Kerala in 2018.[12,13] The experience gained was handy in making preparations with public health approach based on scientific epidemiological methods of intervention like contact tracing and containment for countering COVID-19 spread.

Our hospital used to be in the forefront of managing people in distress beyond the hospital premises at the time of crisis. Part of response to the impending spread of illness, we in our centre made preparations addressing several issues. Starting fever clinic, setting triage to screen cases suspecting COVID-19, risk assessment of everyone registering for OP consultation based on travel history and locality of living, preparing a standalone treatment area for caring diagnosed cases in isolation, starting testing facility etc were a few steps.

We had an outreach program where free general medical checkup and distribution of needed medicines were arranged in the camps, where migrant workers were living. A base line evaluation of the willingness

and emotional preparedness of staff in caring COVID-19 was conducted in the hospital. The HICC of our institution is experienced in conducting such programs with noticeable positive results.[14]

The Medical professionals are aware about their training needs and they themselves take care of it. Continuing Professional Development programs (CPD) is important for doctors[15] through their wide network reaching out even to small towns in the Country.[16] Our Institution appreciated this fact and organised a CPD with theme COVID-19 essentials. The large number of responders from eligible staff in the institution point to the willingness of professionals and endorses our assumption. The program through online mode was not a hindering factor. The same was our experience when we shifted our mode of teaching medical students using online platforms[8,17] temporarily due to COVID-19 related lock down leading to sudden closure of the college.[18] The higher level of participation and high percentage of success rate shows the keenness of medical professionals in acquiring further knowledge and step up skill, especially when a new disease emerges with challenges.

This training was attended by doctors belonging to various categories. The overall high rate of responses and results are certainly a good sign from the part of doctors expressing their readiness to fight against this pandemic.There are reports on the relatively good commitment of medical staff to the preventive measures that have been recommended by the WHO.[19] The variations between different categories were small and negligible. Residents were the category who responded comparatively less in number (and in the pass rate). They were the most occupied doctors in the campus. Most of them were well versed to the new generation communication gadgets and may have felt that these were familiar to them. In comparison to the residents the response from faculty was appreciable. As the frontline warriors their response rate should be higher.

Conclusion

The higher level of participation and high percentage of success rate shows the keenness of medical professionals in acquiring further knowledge and step up skill, especially when a new disease emerges with challenges. The results will form baseline to make further improvements of the program and to note the good practices when actual service starts.

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Ethical Clearance- We conducted the research following the Declaration of Helsinki. Hence ethical approval was not sought.

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Conflict of Interest - Nil

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