



<https://doi.org/10.47811/bhj.147>

COVID-19 challenges and management of human resource in health, Bhutan's unique approach: Medical University's contribution

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ABSTRACT

In March 2020, the country saw its first case when a foreign tourist tested positive for COVID-19 at Thimphu. There was immediate activation of national preparedness and response plan including the requirements for surge in human resource capacity to handle the novel infection. One key emphasis of the national response was to support the existing 3500 health care workforce by partnering with community in sharing pandemic-related activities. One such initiative was training a pool of people to shoulder basic responsibilities at quarantine and non-hospital isolation facilities. Therefore, Khesar Gyalpo University of medical Sciences of Bhutan was tasked to develop a training program and thus the De-suup plus program was designed with focus on people from non-medical background. This article attempts to describe the development and implementation of the training. The training constituted basic nursing competencies, personal protective equipment and essential public health preventive measures with the purpose of serving at quarantine and non-hospital isolation facilities in the Country.

Keywords: COVID-19; Health human resources; Quarantine; Vital signs.

INTRODUCTION

Bhutan had its first case of COVID-19 when 79 years old American tourist was diagnosed with COVID-19 through RT-PCR test on 5th March 2020. The detection of first case resulted in immediate activation of National Preparedness and Response Plan¹.

Twenty-four months later, with more than 12,000 cases and 6 deaths as per the ministry of health COVID-19 dashboard, the country was categorized into level 4 risk as per Center for Disease control². The country also witnessed all the known variants of corona virus³.

Since the detection of first case of COVID-19, many Bhutanese returned home from abroad, opening the floodgate of COVID-19 cases in the country. For, the returnees, the government started designated numerous hotels in Thimphu, Paro, Punakha, Samtse, Gelephu, Wanguephodrang, Samdrupjongkhar and Chhukha districts as quarantine facilities. All returnees underwent mandatory quarantine for 21 days and RT-PCR test on day 3, day 7, day 14 and day 21. Only upon testing negative on day 21, he or she was discharged on day 22⁴.

In addition, considering the worst-case scenario and limited hospital infrastructures, the government identified facilities where asymptomatic/mild or moderate COVID-19 patients could be isolated. National referral hospital had 350 beds, an additional 150 bedded hospital was inaugurated at Taba for COVID-19 case management⁵. As part of the response plan (drafted in January 2020 and constantly being reviewed by National COVID task Force), new intensive care unit (ICU) facilities were established at Phuentsholing and Gelephu in the south due to their proximity to the porous international border. The ICU facilities were established at Monger in the East and Wangdue Phodrang in central Bhutan.

Additionally, with increasing caseload, to ease the pressure and to prevent further spread, isolation facilities were identified in many districts of the country.

Bhutan's human resource for health was estimated at 3500⁶, with only one ICU specialist, 100 specialist doctors and 200 general medical Doctors and estimated 2000 nurses deployed in 300 Health facilities⁶.

It was strongly perceived that the 3500 health professionals must be kept at health facilities for routine health services including the emergency, critical care, and serious COVID-19 cases in the COVID wards.

Therefore, the government designed numerous response strategies, among which was the noble concept to use "De-suups- guardian of peace" for the De-suup plus training as per the instruction from His Majesty's office.

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A team of faculty members from Khesar Gyalpo University of medical Sciences of Bhutan (KGUMSB) developed a course to train the De-suups, therefore, the name of the training came to be known as “De-suup plus”. The authors have tried to capture in brief what, how, where, who and why these “De-suup plus” training was designed and how the graduates of this course are serving in various places as aimed at the inception of this course.

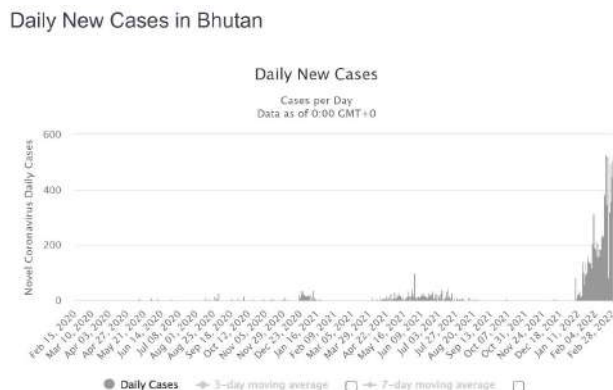


Figure 1. Showing the milestones of COVID pandemic in the Country

The faculty members from KGUMSB designed the course for “De-suup plus” training. Between May 2020 and Feb 2022, a total of 704 participants in 25 batches (2020 – 11 batches, 12 batches in 2021 and 2 batches in 2022) with an average of 30 participants per batch were trained.

The focus areas of seven-day training of De-suup plus are given below⁷⁻⁹.

- Competency 1: Skills to admit and discharge the patient at Quarantine and Isolation facilities
- Competency 2: Awareness on proper body mechanics
- Competency 3: Preparation of disinfectant for decontamination
- Competency 4: Management of infectious wastes items at facilities
- Competency 5: Skill on use of basic PPE such as face mask, gloves and hand hygiene.
- Competency 6: Advance PPE - shoe cover, coverall, apron, goggles/shield including basic PPE (Donning and doffing).
- Competency 7: Basic measurement of vital signs-pulse and respiration, temperature, blood pressure and Pulse-Oximetry with operation and maintenance of related equipment.
- Competency 8: Oxygen administration
- Competency 9: Dead body preparation and management under COVID-19 protocol
- Competency 10: Psychological wellbeing

The training initially was conducted for six days with low dose high frequency approach¹⁰ with various teaching-learning methods for provision of applied knowledge related to each of the topics followed by hands on practice. Prior to the next topic/session, every participant underwent hands on practice, which was followed by assessment with objective structured assessment checklist (hand hygiene, donning and doffing of mask, gloves, advance personal protective equipment and all four vital signs). The participants were required to achieve minimum level of mastery (Does level from miller’s pyramid) for almost every skill¹¹. It was compulsory to repeat the assessment if the participant failed to attain the minimum level of mastery. They were ultimately compiled into portfolios and further feedback were provided each of the skills listed¹².

Training

The training started in May - June 2020 for 11 batches with volunteers from Civil service, NGOs, followed by De-suups at later batches.

Training description;

The training started with overview of COVID-19, country’s preparedness followed by the response plan briefing prepared by TAG. This was followed by the introduction to basic competencies of knowledge, skills and attitude that are expected from a training graduate. Hand hygiene, donning and doffing of advance PPE, vital signs (pulse and respiration, BP, oxygen saturation and temperature), infection control¹³, handling of the body of the diseased with COVID-19 and mental wellbeing were taught and assessed during the seven-day training.



Figure 2. Demonstrating the various session during the training

Teaching methods and Evaluation system

For the “De-suup plus” training, teaching methods such as lectures, demonstration, role play, peer teaching with feedback and hands on practice with guided session were utilized¹⁴.

The evaluation system included use of checklist with direct observation of performance of all the skills by the facilitators using a checklist with improvement-oriented feedback on the performance^{15,16}.



Figure 3a. Peer learning in groups



Figure 3b. Knowledge assessment

The impact of training

A total of 560 De-suups and 144 non-De-suups in 15 districts were provided with basic frontline workers for COVID-19 then De-suup plus training from May, 2020 – Feb 2022.



Figure 4. Graduates at Punakha, Tsirang and Thimphu

The De-suup plus graduates have successfully served in places such as quarantine facilities, isolation facilities, at flu clinics and also supported mass screening of COVID-19 during lockdown period one, two and three in the country. There were primarily involved in basic health monitoring of health status of asymptomatic patients with COVID-19 with full PPE.

At quarantine facilities, they monitored the health status through daily conversation via phone or social media application in particular with WhatsApp and Telegram.

At Flu clinic and mass screening, they served as adjuvant to the health professionals. All these resulted in requirement of a fewer number of nurses and other health professionals at quarantine and isolation facilities. As a result, 3500 plus health professionals¹⁷ were efficiently utilized for core health care as the basic and non-essential activities were taken care by the group of De-suups. Also, this noble initiative of “De-suup plus” has led to development of pool of future potential reserve accelerated health work force in case of public health emergencies.

This practice of training De-suups for “De-suup plus” is a unique system. Some countries choose to deploy the students by accelerated graduation, while others chose to develop newer courses.

CONCLUSIONS

The initiative such as “De-suup plus” can be a great example of i. Surge capacity, ii. Developing reserve forces for human resources in health for future emergencies as this pandemic and iii. Great and meaningful engagement of youths and the basic nursing competencies will surely be a way to encourage healthy and useful lifestyles in themselves and they will also advocate for healthy lifestyles in their communities.

ACKNOWLEDGEMENTS

The team would like to express appreciations to Ministry of health, Royal Civil Service Commission and De-suung office and KGUMSB management for the support.

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CONFLICT OF INTEREST

KT and KC are the Editorial Board Members of the journal. They were excluded and blinded from all stages of peer review and editorial decision of the manuscript