

Hospital Preparedness for Outbreak at Patan Hospital: Lesson Learnt from COVID-19

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ABSTRACT

Patan Academy of Health Sciences started preparedness for COVID-19 in response to increasing number of patient in neighboring country. Outbreak preparedness in resource limited setup is challenging. Despite this, preparedness was done in reference to WHO interim guidance utilizing best available resources. During this preparedness, one patient was isolated as suspected COVID-19. This paper presents level of preparedness achieved with the limited resources and the lesson learned while isolating the patient.

Keywords: COVID-19; Disaster; hospital preparedness

INTRODUCTION

The first case of coronavirus (COVID-19) was reported to WHO country office on 31 December 2019.¹ Due to emerging number of new cases and increasing mortality WHO declared public health emergency of international concern in 30 January 2020.² Patan Academy of Health Sciences (PAHS) started preparation for the outbreak response on 22 January 2020. The academy (PAHS) is one of the tertiary care hospital in the capital city of Nepal which runs undergraduate and post graduate medical education programs. This is the first hospital in Nepal to develop and test hospital based epidemic outbreak management plan.³ A full scale simulation exercise to test the epidemic outbreak plan was conducted in February 2018.

PREPARATION

The preparation for COVID-19 was initiated by Infection prevention and control committee (IPCC) and disaster management committee. The preparedness was focused on the infection control and prevention during health care when COVID-19 is suspected; WHO interim guidance was followed.⁴ Screening question was developed on the basis of WHO case definition.⁵ Patients were screened in triage and outpatient department for early identification of the suspected case. Maintenance of regular standard precaution in the hospital was ensured. Two isolation areas were developed; primary

isolation area in emergency to contain the patient identified in emergency and outpatient department. This was necessary as our hospital could manage only five isolation bed, so had there been influx of patient, they would have to be transferred to other hospital. So, primary isolation area was important for the brief containment. Secondary isolation area was developed in ward. World health organization recommends isolation with adequate environmental ventilation or room with 12 air exchange per hour.⁴ This was challenging as rooms in the hospital did not have cross ventilation for the adequate air circulation. So, rooms were managed by placing exhaust fans to maintain adequate aeration.

Isolation rooms were stocked with necessary personal protective equipment (PPE). Standard operating procedures were developed. Route to enter and exit the isolation area was identified. Human resources in each shift were identified and trained. Trainings were focused on using PPE and following standard operating procedure of the isolation area. It was necessary to train large number of health care worker within limited time and resources. Audio visual materials and flyers were developed locally. Hands on training was given to first line staffs while others were oriented using audiovisual materials. Audio visual materials was shared in closed group social media.

There are six hospitals (hub) in the city which works in coordination with 10-15 surrounding hospitals (satellite

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hospitals).⁶ These six hub and their satellite hospitals work in coordination with Health Emergency Operating Centre (HEOC), which is under Ministry of Health and Population of Nepal. Our hospital is one of the hub hospital which coordinates 15 satellite hospitals near us. So, as a part of preparedness hub and satellite meeting was conducted on 27th January 2020. The objective of this meeting was to identify and pool the resources. So, in our hub satellite system we identified 13 isolation beds in emergency, 37 isolation beds in wards, four negative pressure rooms, and six ICU isolation beds with ventilators. Out of these five isolation beds in emergency, twelve isolation beds with two negative pressure rooms were made ready for response in our hub and satellite network. Keeping ventilator standby was not feasible for all hospitals.

RESPONSE

On 31st January, a suspected COVID-19 patient was admitted to our hospital. The patient was in isolation for three days until the COVID-19 test was reported negative. During this period coordination was challenging; central coordination mechanism for such incidence was felt necessary. The hospital however had coordination mechanism for regular hospital activities and for disaster in which there is a surge of patient. So, planning and testing a coordination mechanism for such event was found to be necessary. Running isolation required adequate number of human resources and consumed more than expected number of PPE per day. This was beyond the resources that we had in stock. Had the patient been in isolation form many days, it would have been difficult to manage the resources. This would have been more difficult if we had to manage critically ill patient.

Chest X ray was done with portable computed radiography machine where X ray cassette had to be taken to radiology unit to convert it to digital picture. So, x ray cassette was first kept in biohazard bag and taken inside isolation unit. On exiting from the isolation, biohazard bag was discarded and only x ray cassette was brought out of the isolation unit. Management of food for patient, washrooms and disposition of the waste are important areas that needs to come under planning. Educating and training X ray staff, laboratory staff and cleaning staffs is also important. Beside this visitor management and communication with family member should also be planned beforehand.

CONCLUSIONS

Tertiary hospitals in Nepal has more or less similar capacity to our hospital, so we hypothesized that other hospitals will also face the similar problems that we have faced. It appears difficult with the available resources for hospital to manage large influx of patient or few patients continuously for many days. So, during this period it is very necessary that all hospitals in the region pool their resources and have a central coordination mechanism to manage this resource. The coordination mechanism of hub and satellite hospitals might be an area to work on to address the resources and capacity. The future outbreak management plan should be developed considering these issues.

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