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Perspective

Preparedness of Community Hospital Against COVID-19

Ijendra Prajapati,^{a,c} Gyan Kayastha^{b,c}

Government of Nepal (GoN) imposed a nationwide lockdown on 24th March, 2020 with an effort to limit the spread of novel corona virus which is responsible for corona virus disease (COVID-19). COVID-19 Nepal: Preparedness and Response Plan (NPRP) was implicated on April 2020 which stated Sukraraj Infectious and Tropical Disease Hospital (STIDH) in the capital, Kathmandu has been designated by the GoN as the primary hospital along with Patan Hospital and the Armed Police Forces Hospital in the Kathmandu Valley. The Ministry of Health and Population (MoHP) had requested the 25 hub and satellite hospital networks across the country; designated for managing mass casualty events; to be ready with infection prevention and control measures, and critical care beds where available.[1]

Hospitals with less than 50 beds viz community-based municipality hospitals were left feeble against the surge of the pandemic. Waiting for the aid and support from government was the only option for some hospitals that lacked resources to combat this invisible culprit of global pandemic. However, Nepal Korea Friendship Municipality Hospital (NKFMH) located in Thimi, Bhaktapur

determined itself to fight against this pandemic with limited resources. This hospital not only serves the local community but also patients coming from all over Province 3 due to government insurance facilities provided by this hospital. With interaction and support from the Hospital Director, Mayor of the municipality, Korea International Cooperation Agency (KOICA), Bhaktapur Red Cross, Hospital board, Hospital Staffs, Medical Team, Administration, Interpid and locals in the community prompt preparedness action plan was formulated through various meeting at different levels and acted upon.

The pathogen of COVID-19, severe acute respiratory syndrome coronavirus2 (SARS-CoV-2), was confirmed to have human-to-human transmission which supposedly originated in Wuhan, China spread not only to other cities in China but also throughout the world via case transportation. [2,3]

Health worker are more vulnerable groups as the reports show 1.1% of the reported cases in China were healthcare workers.[4] SARS-CoV-2 is believed to transmit from person to person via large respiratory droplets, either being inhaled or deposited on mucosal surfaces. Other routes implicated in transmission of this virus include contact with contaminated fomites and inhalation of aerosols produced during aerosol generating procedures (AGPs). The relative role of droplet, fomite and aerosol transmission for SARS-CoV-2, the protection provided by the different components of personal protective equipment (PPE) and the transmissibility of the virus at different stages of the disease remain unclear. Caution should therefore be exercised when considering these elements.[5,6]

Providing PPE to health care worker is vital in avoiding occupational exposure and infection. Disease Control and Prevention for COVID-19 infection control of health care personnels

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a - Consultant Surgeon,

b- Consultant Physician,

c - Nepal Korea Friendship Municipality Hospital.

Corresponding Author:

Ijendra Prajapati

e-mail: ijenprajapati@gmail.com

ORCID: <https://orcid.org/0000-0002-2181-1035>

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recommended gloves, gowns, respiratory protection, and eye protection as standardized PPE.[7] However, protective clothing, N95 respirators, and goggles are not commonly used in clinical practice and hence are not in bulk stock.

Screening of patients is the most important step which was started from the day of lockdown at the entrance of hospital. Patients with fever were seen in fever clinics from 28th March, 2020. After evaluation of fever, rapid diagnostic test (RDT) and polymerase chain reaction (PCR) are being done in suspected patients. NKFMH started its own PCR Lab from 7th April, 2020, 738 PCR and 137 RDT have been performed till date. Protecting healthcare worker and establishment of isolation for COVID-19 patients were given the utmost priority. PPE has been provided for frontline health workers collected in collaboration with KOICA, Municipality and Bhaktapur red cross, and most of them were purchased. Four hundred and eighty N95 masks have been distributed and rest are kept in stock for future. The orthopedic ward has been converted to isolation room six beds with facility of CCTV monitoring where suspected COVID-19 cases are kept. On April 24, 2020 ten bedded negative pressure, individual chambered, isolation ward with two ventilators was established to treat COVID-19 positive cases, with backup of five bedded normal ICU and three ventilators. Medical officers, nurses and Health assistant were trained to do intubation, CPR and educated about the COVID-19. Mock Drill exercise on management of suspected cases was done on May 1, 2020 with cooperation from Municipality, Bhaktapur red cross, hospital staff, Interpid and Centre for molecular dynamic management.

Surgical, gynecology and obstetrics, orthopedic emergency/semi-elective surgery (total 110) have been performed following the guidelines for performing operation for safety of both patient and medical staff. Surgery in COVID-19 suspected/positive patient is a challenging scenario for which a separate COVID-19 operation theater (with negative pressure) was established on May 1, 2020.

List of Preparedness for COVID-19.

- Fever clinic
- Quarantine/Isolation: 10 single rooms in a guest house for suspected patients.
- Swab collection booth

- COVID-19 Isolation room, six bed with CCTV surveillance
- Negative pressure Covid Ward, 10 bed with 2 ventilators. (Additional 3 ventilators in ICU)
- Upgraded 50 bedded hospital to 75 bed hospital
- Separate PCR Lab.
- Separate COVID-19 negative pressure Operation theater.
- Training of Medical officers, Nurses, health assistant about intubation, basic CPR, donning and doffing.
- Donning and Doffing room.
- Screening of high-risk group in community. (Total 739)
 - High-Risk front-line hospital staff
 - Municipality coworkers (Sweepers, Garbage collectors)
 - Identifying and screening of suspected people returning from abroad.
 - Frontline workers in community service
 - Local Leaders
 - Politicians
 - Red Cross staff
 - Journalist.
 - Social Workers
- Level II PPE for hospital frontline workers.

Our hospital NKFMH leading by example adopted interim measures, including online consultation, region separation, and epidemic priority, to alleviate the pressure in the clinical work, reduce the cross-infection, and strengthen the protection of high-risk staff. However, there are still some limitations. First, the supply protocol compromised the health protection of low-risk personnel without standardized PPE. Second, the interim management strategies could not resist large-scale outbreak and long-term PPE shortage. With the

increasing number of Covid-19 patients in country and the burden sustain by the government allocated hospital is beyond imagination. Preparedness of other hospitals including private sectors is the prime concern. Among them community hospitals will play the important role in managing the pandemic in coming future

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REFERENCES:

1. United Nations Nepal, COVID-19 NEPAL: Preparedness and response plan (NPRP). April 2020. Available from: [https://www.who.int/docs/default-source/nepal-documents/novel-coronavirus/covid-19-nepal-preparedness-and-response-plan-\(nprp\)-draft-april-9.pdf?sfvrsn=808a970a_2](https://www.who.int/docs/default-source/nepal-documents/novel-coronavirus/covid-19-nepal-preparedness-and-response-plan-(nprp)-draft-april-9.pdf?sfvrsn=808a970a_2)
2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical Features of Patients Infected With 2019 Novel Coronavirus in Wuhan, China. *Lancet*. 2020;395:497–506. PMID: 31986264 DOI: [https://doi.org/10.1016/s0140-6736\(20\)30183-5](https://doi.org/10.1016/s0140-6736(20)30183-5)
3. Du Z, Wang L, Cauchemez S, Xu X, Wang X, Cowling BJ, Meyers LA. Risk for transportation of 2019 novel coronavirus disease from Wuhan to other cities in China. *Emerg Infect Dis*. 2020;26:1049-52. PMID: 32053479 DOI: <https://doi.org/10.3201/eid2605.200146>
4. Lai X, Wang M, Qin C, Tan L, Ran L, Chen D, et al. Coronavirus Disease 2019 (COVID-2019) Infection Among Health Care Workers and Implications for Prevention Measures in a Tertiary Hospital in Wuhan, China. *JAMA Network Open*. 2020;3(5):e209666. PMID: 32437575 PMCID: PMC7243089 DOI: <https://dx.doi.org/10.1001/jamanetworkopen.2020.9666>
5. Rothe C, Schunk M, Sothmann P, Bretzel G, Froeschl G, Wallrauch C, et al. Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany. *N England J Med*. 2020;382:970-1. PMID: 32003551 DOI: <https://dx.doi.org/10.1056/2FNEJMc2001468>
6. Ong SWX, Tan YK, Chia PY, Lee TH, Ng OT, Wong MSY, et al. Air, Surface Environmental, and Personal Protective Equipment Contamination by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) From a Symptomatic Patient. *JAMA*. 2020;323(16):1610-1612. PMID: 32129805 DOI: <https://doi.org/10.1001/jama.2020.3227>
7. US Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019- nCoV) or Patients Under Investigation for SARS-CoV-2 in Healthcare Settings. Atlanta, GA: US Centers for Disease Control and Prevention, 2020. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>