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Hospital incident command system, the pillar of COVID-19 outbreak response: an experience from Patan Hospital, Nepal

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Abstract

In times of disaster, hospital's preparedness for disaster and response plan contributes significantly to better functioning of the hospital and reducing mortality and morbidity. Activating Hospital incident command system in a timely manner in Patan Hospital has showed how the hospital is better prepared to handle this epidemic outbreak.

Keyword: Disaster, epidemic, hospital preparedness, incident command system

The world is as strong as the weak health system-- “If we fail to prepare, we prepare to fail.”

World Health Organization (WHO) declared COVID-19 a Public Health Emergency of International Concern (PHEIC) on 30 January 2020.¹ A week earlier the first case was confirmed in Nepal.² Internal preparations were started locally with targeted planning, capacity building and risk reduction in case of massive community outbreak.^{3,4,5} As instructions to set up isolation beds were put forward by the government, Patan Hospital had already come up with 5-bedded makeshift isolation ward and definite plan for triage (with screening questionnaire), examination, throat swab collection and transfer of suspected patients to isolation

ward. When WHO declared COVID-19 as pandemic on 11 March 2020, it was a warning sign to prepare for disaster risk reduction and management.⁶ On 16 March 2020, the Hospital Incident Command System (HICS) was activated, the COVID-19 preparedness and response plan was endorsed which was 8 days before the appearance of the second positive case in Nepal.^{7,8,9}

With the activation of Incident Action Plan (IAP), Figure 1, there were various plans viz. A (makeshift isolation with 5 isolation beds), B (separate isolation block with 6 isolation beds and 21 ICU beds with 15 ventilators and 45 positive cases beds) and C (whole hospital except emergency maternity services and NICU) which could be implemented in various stages of outbreak in Nepal.

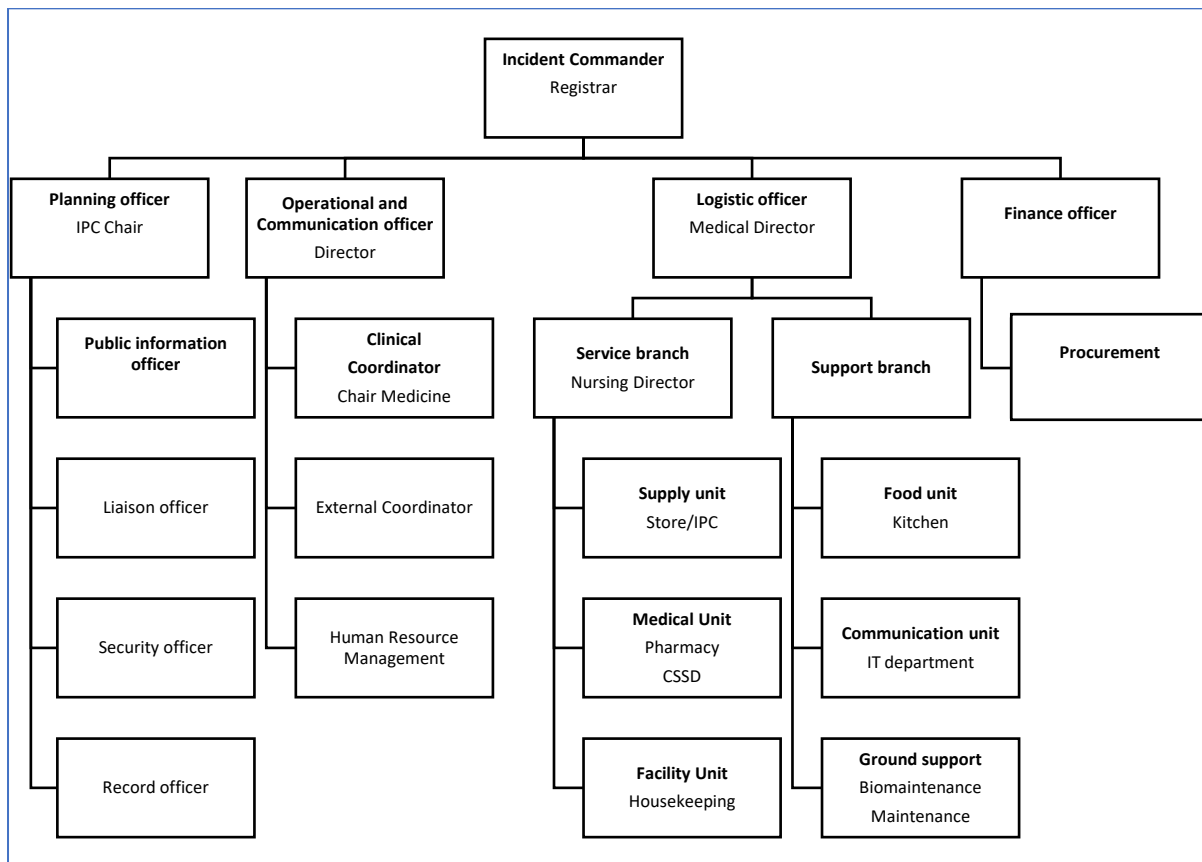


Figure 1. The Patan Hospital ‘Incident Action Plan’ and Hospital Incident Command System (HICS) for disaster management, the context of COVID-19

Currently, the hospital is in Plan B with two positive cases in COVID ward and few in the isolation ward. Patan Hospital has around 1500 staff, of which only staffs needed for

optimal functions have been mobilized to limit the exposure to other staffs. There has been optimal utilization of human resources from departments of Internal Medicine,

Paediatrics, Anesthesia and General Practice and Emergency Medicine as needed in Plan B. When Plan-C comes in action, all the manpower from various departments will be mobilized. There is routine, at least once a day, meeting held in the HICC room (the conference room of Vice Chancellor Office) for review, troubleshoot daily issues and plan for future.

In an epidemic disaster like this, the triage and isolation areas in the hospital are of major concern.¹⁰ The ongoing construction of the new block in hospital premises and the recently reconstructed ICU served as the perfect infrastructure for isolation and ICU facility for COVID-19 patients. Setting up a well-planned triage (primary and secondary) area and fever clinic has been used to channelize emergency department (ED) and outpatient department (OPD) services. Activating IAP and HICS at Patan Hospital helped in sharing these plans with MOHP which proved to be a useful resource for the government. Caring for non-COVID patients in this difficult time was another major challenge. Hence regular hospital services like OPD, immunization, regular emergency, lab and ultrasound services ran uninterrupted. This ensured that all patients who visited Patan Hospital received the clinical care they sought.

Being a hub hospital in Lalitpur district with 15 satellite hospitals, Patan Hospital is in continuous and effective communication with its satellite hospitals for resource and manpower mobilization if needed. Internal communication is being carried out with 12 walkie-talkie sets (two-way radio) services and with Corporate Sim cards given to all the staff. Internal communication was effective as the staff in isolation who were wearing protective gear could easily communicate with staff outside and call them in isolation only when required, thereby reducing the unnecessary usage of personal protective equipment (PPE) in this scarce time. All these services have been provided free of cost for the hospital staff.

The next important thing was optimizing hospital supplies and preparing to overcome the problem of global shortage of supplies. It was important to be aware and educate the staffs about the level of PPE that would be optimal for the safety of healthcare workers, and manage the stock judiciously for use in future. In the time of such disaster, the procurement processing time for supplies is to fast-tracked as per the Public Procurement Act.¹¹ Since the whole world has been facing the problem of shortage of supplies, the hospital had to move a step further and work towards in-house production of certain gears of PPE that would be sustainable and reused. The basic idea was to make the hospital functional for at least 2 months even without external assistance and the hospital managed to overcome that challenge. Additionally, the supplies from donors and other sources have been properly channeled through a one door system. The records of the store is verified by Infection Prevention and Control Committee (IPCC) for the quality assurance, as well as duplication, misuse and loss of supplies.

Simultaneously, as international travel was banned and borders were sealed, it was important to evaluate medicines, hospital supplies, food, maintenance supplies and housekeeping. It was crucial to know what was in stock and for how long it would last and how the hospital could procure to function smoothly, plan for unforeseen issues during this difficult time.

In the initial days, there was fear among the healthcare workers which had to be addressed and resolved. Mitigation strategies like repeated training of staff, emphasizing on the proper usage of PPE, regular meeting with in-charges and chairs of the departments (head of departments, HOD) helped to decrease fear and motivate all levels of hospital staff in their work. The 'COVID-19 preparedness plan and response' document served as an excellent guiding protocol for the staff. As reported positive cases started to increase, there was concern among the staff if the hospital would arrange for quarantine facilities if it was not possible for them to self-

quarantine at home. The biggest challenge was whether the local community would be supportive of setting up a residential facility outside the hospital as there was fear among the public as well. But the local community and local administration were supportive and the hospital succeeded in making arrangements for residential and quarantine facilities. The residential facility which is targeted for doctors, nurses and other staff working in fever clinic, isolation ward, COVID ward and COVID ICU is arranged in the building outside the hospital and the old private ward. It is optional and those staff who wish to stay at hospital after caring for COVID/suspected COVID patients can avail this facility. Quarantine facility has been arranged in the section of the building on the third floor that houses HOD offices. Quarantine is mandatory for those staff who are exposed when caring for COVID patients.

Another technical challenge was that we had only one national COVID-19 testing facility at National Public Health Laboratory. So, due to the load of tests there was delayed reporting which resulted in longer bed occupancy by suspected patients, draining of scarce resources. Hence, commencement of PCR testing facility for COVID-19 on 17 April 2020 in Patan hospital, with the aid of the government, was an important development.

The timely activation of HICS allowed the hospital to be ready with preparedness and response plan. The hospital could overcome challenges of scarcity of PPE and safety issues, the hospital staff felt secure and motivated to work in this of disaster. Patan Hospital has been carrying out regular disaster drills to upgrade the disaster response plans. It was the first hospital in the country to conduct hospital-based epidemic outbreak drill and develop a robust epidemic response plan.¹² There was an effective protocol in place so everyone was well trained and knew about their designated roles. This has contributed to better preparedness of Patan Hospital in this pandemic. All these activities have been helpful to other healthcare. So there is always a strong belief towards Patan Hospital by the

government as well as public that it will deliver its best even in the time of disaster.

In times of disaster, it is important to have an effective IAP and HICS to coordinate and guide all levels of staffs in their respective roles for smooth functioning of the hospital, ensure the safety of patients and staffs.

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Conflict of Interest

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Author contribution

All authors participated equally in sharing experience, writeup and revising the manuscript.

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