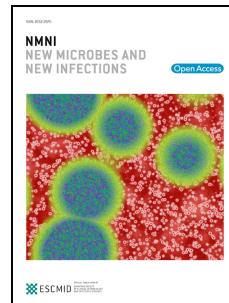


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COVID-19: the current situation in Nepal

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COVID-19: the current situation in Nepal

Abstract

The recent global pandemic of 2019-nCoV is increasingly alarming. As of June 21, there are more than 8.7 million worldwide cases with 460000 deaths. Nepal is not an exception to COVID-19 and is currently facing a challenge to prevent the spread of infection. The analysis of the detected cases, severity, and outcomes of the cases within a country is important to have a clear picture of where the pandemic is heading and what measures should be taken to curb the infection before it becomes uncontrollable. In this manuscript, we have covered all the cases, recoveries, and deaths attributed to COVID-19 in Nepal starting from the first case on January 23 to June 21. At present, COVID-19 has spread all over Nepal with a rapid increase in the number of new cases and deaths which is very alarming in a low-income country with an inadequate health care system like Nepal. Although the government implemented an early school closure and lock-down, the management to contain COVID-19 does not appear to be adequate. Our manuscript gives a clear understanding of the current situation of COVID-19 in Nepal which is important for providing a direction towards proper management of the disease.

Introduction

COVID-19 is an infectious disease caused by a newly discovered coronavirus 2019-nCoV.¹ The symptom onset date of the first patient identified in Wuhan city of China was on December 1, 2019.² After the official notice received by the WHO on December 31, the WHO and the global community have been working continuously to contain this disease which quickly became a global pandemic. Although the initial increase of cases was gradual, a recent drastic surge in the number of cases reflects the speed of transmission from person to person. For instance, the number of confirmed cases was 282 by January 20³ whereas, as of June 21, there are more than 8.7 million cases with more than 460000 deaths.⁴

The first case to first local transmission in Nepal

The first case in Nepal was detected on January 23, on a returnee from Wuhan, China^{5,6} (**Table 1**). The diagnostic approaches in Nepal were not established at that time requiring the sample to be sent overseas for the first diagnosis. Once the first case was detected, the

government of Nepal has been working on minimizing the spread and impact of the disease. The initial response was to disseminate information via public broadcasters including caller tune on cell phone⁷; train the frontline healthcare workers; setup a domestic testing system by establishing central and local testing laboratories. By March 19, when Nepal had no active cases, Nepal implemented the closure of all the schools. This indicated the commitment from the government to contain the disease at an early stage. Despite these efforts, two months after the first case, the second case was diagnosed through domestic testing on March 23 on a returnee from Europe. In response to this, Nepal decided to close its international borders and imposed a national level lock-down until June 14 (74 days). Besides, the government established a COVID-19 crisis management system with experts from various sectors and focused on setting up temporary hospitals, quarantine, isolation, and ICU beds at each province. The first local transmission was the 9th case detected on April 4 (**Table 1**).

Table 1: COVID-19 cases diagnosed until the start of local transmission. (Source: Government of Nepal situation reports)⁸.

Case	Diagnosed date	Arrival in Nepal	Province	Remarks
1	January 23	Wuhan: January 9	Bagmati	
2	March 23	France: March 17	Bagmati	Shared flight with 5 and 6
3	March 25	UAE: March 19	Bagmati	
4	March 27	UAE: March 20	Sudurpaschim	
5	March 28	Belgium: March 17	Gandaki	Shared flight with 2 and 6
6	April 1	Belgium: March 17	Gandaki	Shared flight with 2 and 5
7	April 4	India: March 25	Sudurpaschim	
8	April 4	India: March 27	Sudurpaschim	
9	April 4	-	Sudurpaschim	Local transmission, contact with case 4

Sporadic transmission, recoveries, and deaths

Following the first local transmission and with the increase in the testing facilities within the country, Nepal has seen a rapid increase in the number of cases with a total of 9026 COVID-19 cases spread over all the seven provinces covering 75 out of 77 districts as of June 21, 2020

(**Figure 1**). Nepal has detected more than 200 cases per day consecutively since June 1 and even with the national level lock-down, the number of infections is doubling in 10 days in average (**Figure 2a**). Although the majority of diagnoses are being made at the quarantine centers, where returnees are held, Nepal is continuously seeing a large number of cases with the unknown origin of transmission, which is alarming. Although the number of new infections is much higher than the number of recoveries, 1772 patients have recovered so far (**Figure 2b**). Furthermore, there is a steady increase in the number of deaths attributed to COVID-19. First death on May 16 included a 29-years postnatal mother with an unknown origin of transmission and as of June 21, there were 23 fatalities. Surprisingly, in the majority of the deaths, people died outside of the hospitals and COVID-19 was confirmed after death.

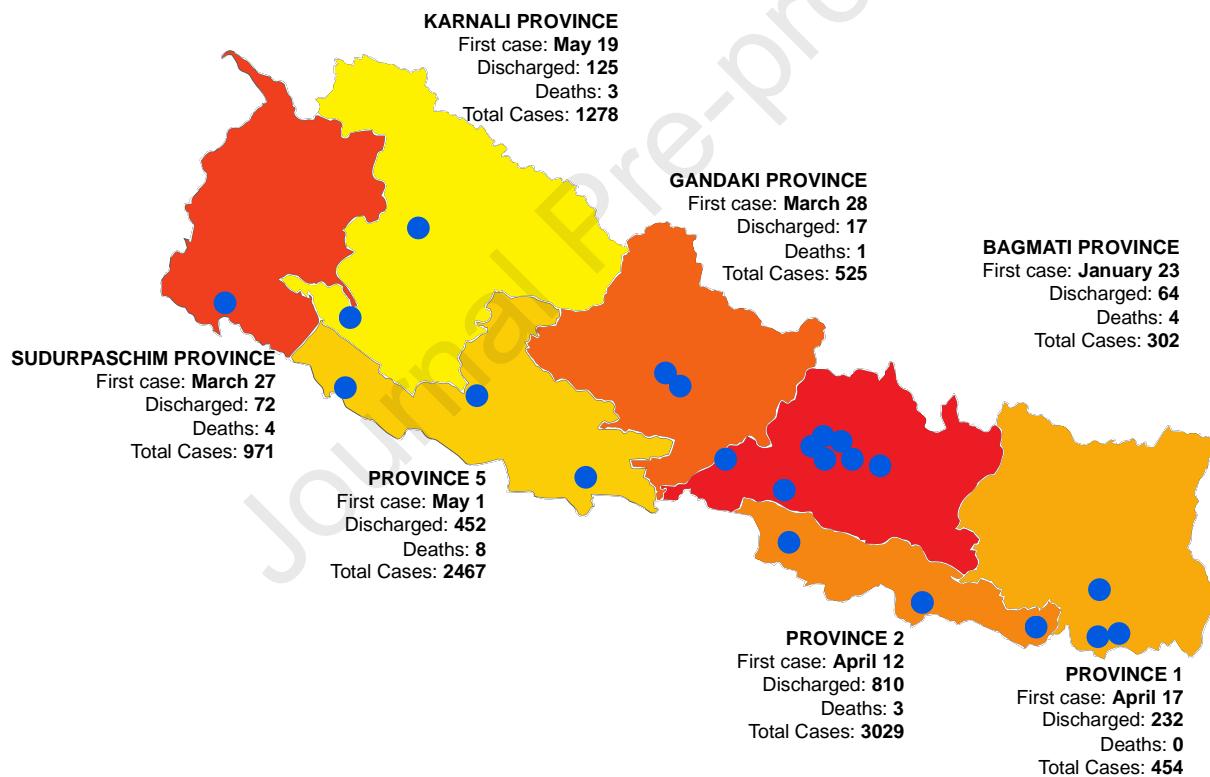


Figure 1: Spread of coronavirus within Nepal. Status of coronavirus infections in seven different provinces of Nepal. Provinces are coloured red to yellow based on the chronology of first case appearance. Blue circle indicates coronavirus PCR testing laboratories distributed in all the provinces. The total number of test labs in Nepal is 22. The data is extracted from reference ⁸, and current as of June 21, 2020.

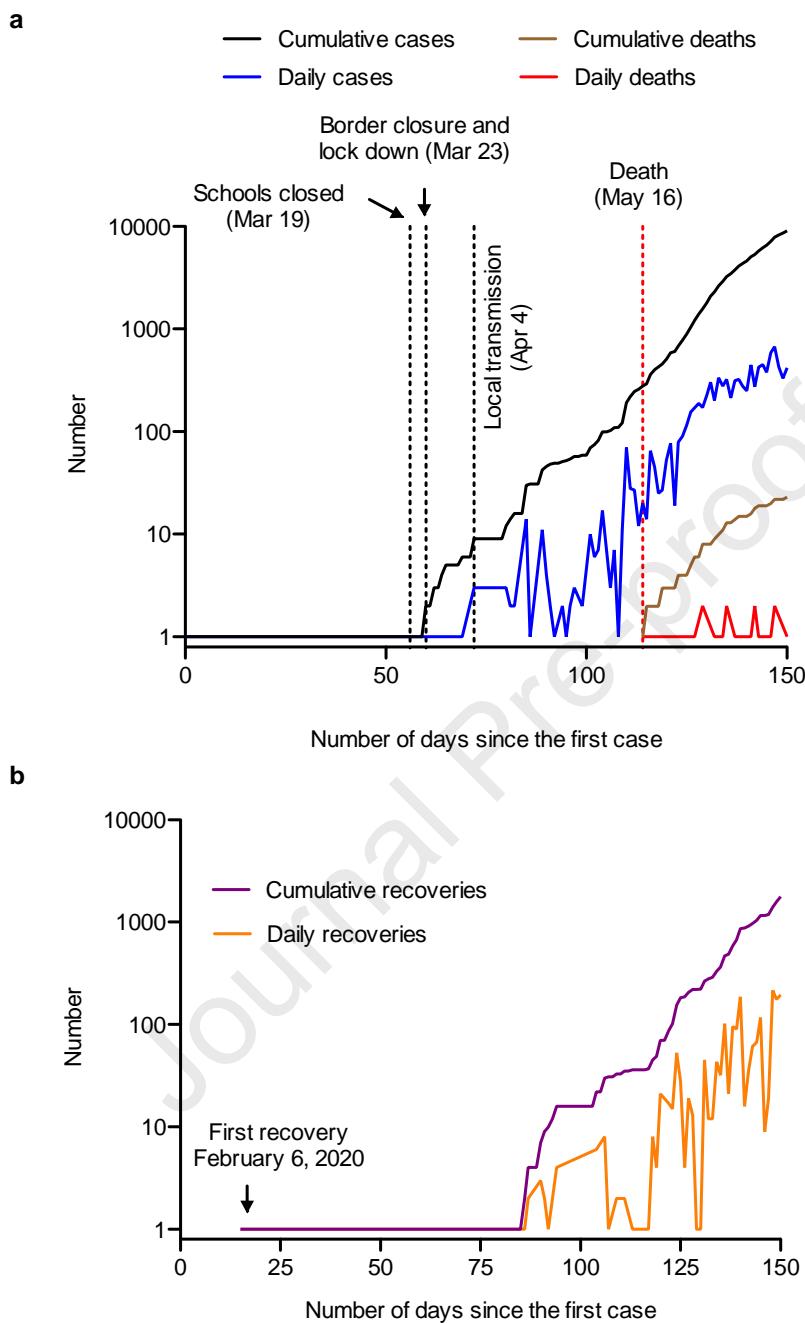


Figure 2: Infection, death and recovery related to COVID-19 in Nepal. (a) Number of cases and deaths. (b) Number of recoveries. (x-axis shows the number of days since January 23, the reported first case, and y-axis shows the cumulative and daily number of cases, deaths or recoveries in \log_{10} scale). The critical incidences are indicated by dotted lines. The data is extracted from reference ⁸, and current as of June 21, 2020.

Current situation of health care and present challenges in Nepal

With significant achievements made in the health care sector of Nepal in recent decades, the current situation of health care system is acceptable as the major health problems of past decades- malaria, tuberculosis, diarrhea, respiratory diseases, typhoid, chickenpox, tetanus are either under control or in descending trend.⁹ However, due to the uncontrollable increase in COVID-19 cases and less-preparedness for immediate management of highly infectious disease with significantly lower budget allocation, the prompt and effective response of Nepal to a highly infectious or a new pandemic diseases is doubtful.

For the prevention of the spread of COVID-19, contact tracing and testing of the high-risk population in the early stages is of utmost importance.¹⁰ As the number of cases with unknown origins started surging, contact tracing became very challenging and the designated quarantine centers started to become overwhelmed, following which the government requested self-isolation to all the people who were suspected to have COVID-19. Although the government communication strategies to keep the public informed of how best to avoid infection are vital,¹⁰ due to the lack of proper management and follow-up to check if people are strictly following the instructions, Nepal is at a very challenging stage to further stop the spread of cases in the community.

WHO-China Joint Mission, consisting of experts from various countries concluded the seriousness of COVID-19 on February 24 and stipulated five recommendations that include; activate the highest level of national response management, community education, contact tracing and isolation, enhancing surveillance.¹¹ Nepal's initial actions to manage the disease were praiseworthy, however, the recent trend of the infection progression indicates that proper management is lacking and a lot has to be done to prevent the uncontrolled community transmission. The aim at present is to reduce sporadic transmission, which is only possible with the expanded surveillance system to detect COVID-19 transmission chains by testing all people with atypical pneumonia. We should increase the number of tests and trace as many cases as possible. Also, we should fully educate the general public on the seriousness of COVID-19 and their role in preventing its spread as suggested by WHO.

Crisis management, adaptation, and infection mitigation

To respond to the crisis caused by the global COVID-19 pandemic, a coordinated effort across many sectors of society is necessary¹². As the treatment of COVID-19 only includes supportive therapies, attempts should be made to prevent its spread in society as much as possible. For which, the government bodies should be involved in the early detection, contact tracing and isolation of suspected individuals whereas the public should be focused on following the guidance from the government, including proper cough etiquette, regular handwashing, and physical distancing. The severity of the restrictions should be based on the clusters of cases identified without neglecting the daily basic requirements of people for living and well-being.

Elderly people and people with the underlying disease have a higher risk of severe disease¹³ which might require a longer hospital stay with ventilatory assistance. Thus, people at high risk can reduce the risk of getting infected by following simple physical distancing and hygiene measures¹⁴. In a recent review on the effectiveness of quarantine measures during severe COVID-19, it was found that quarantine can reduce the incidence of infection by 44% to 81% and deaths by 31% to 63%¹⁵. Quarantine, combined with other measures, such as avoiding or gathering is more effective at reducing the spread of COVID-19 than quarantine alone. Thus, the combination of quarantine with other prevention and control measures show the greatest effect in reducing transmission, incident cases, and mortality.

Summary

Slowing the transmission of COIVD-19 and protecting communities will require the participation of every member of the community. Misleading, ambiguous, and false information can have serious negative public health consequences, including undermining adherence to physical distancing measures and movement restrictions¹². In conclusion, it is important to take consideration that communities, including the most hard-to-reach and vulnerable groups, have a voice and are part of the response.

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