



Review Article

How should Nepal apply lock-down exit strategy against rising COVID-19 burden in Nepal?

Sujan Babu Marahatta^{1,2*}, Anita Mahotra^{1,4} and Neeta Aryal³

¹ Manmohan Memorial Institute of Health Sciences, Kathmandu, Nepal

² Nepal Open University, Nepal

³ Health Research Together Initiative-Nepal (HeaRT-Initiative), Kathmandu, Nepal;

⁴ YUWA, NOREC Youth Exchange Fellow, Nepal

Received: May 15, 2020; Accepted: June 14, 2020; Published: June 25, 2020

Abstract: COVID-19 epidemic in Nepal is escalating with new cases/admissions at hospitals in recent weeks. The rise in cases is contributed by importation from India and has also led to an increase in the number of local/community transmission. While long-term lockdown can have devastating consequences in population, it is high time to consider the possibilities of exit strategies. The main objective of this piece is to explore the literature to lay out the possible measures for exit from the lockdown in Nepal. We used a descriptive review approach to compare and analyze the published academic and non-academic articles related to COVID-19 and lockdown until date. Post lifting plan should be in place as a roadmap to recovery. An exit strategy can be enacted effectively only when the community complies with new normal adjustments aided with effective public health measures and restrictions. Phase-wise measures should be employed while sudden loosening of restriction might result in detrimental effects.

Keywords: COVID-19, exit strategy, lockdown, new normal, post lifting plan

सारांश: विश्वव्यापी कोभिड १९ को महामारीसँगै नेपालमा पनि विगतका हप्तादेखि अस्पतालमा भर्ना हुने संक्रमितको संख्या बढेको छ । पछिल्लो समय नेपालमा भारतबाट फर्किएका व्यक्तिसँगै सामुदायिक स्तरमा कोरोना संक्रमणको जोखिम बढेको छ । लामो समयको लकडाउनले जनजीवनमा पार्न जाने नकारात्मक असरलाई मध्यनजर गर्दै आगामी दिनहरूमा यसको मोडालिटी परिवर्तन गरि लकडाउन अन्त्य गर्ने रणनीति अपनाउनु आवश्यक छ । यहाँ हामीले विभिन्न माध्यममा छापिएका लेखहरूलाई वृत्तित रुपमा अध्ययन गरी लकडाउन अन्त्य गर्न सकिने उपाय (मापदण्डहरू) उल्लेख गरेका छौं । वर्तमान अवस्थामा लकडाउनको मोडालिटीलाई परिमार्जन गरी सामान्य अवस्थामा फर्किन नयाँ रणनीति, नियम, र योजना गृहकार्य गर्नु आवश्यक देखिन्छ । लकडाउन अन्त्य गर्ने रणनीतिलाई प्रभावकारी बनाउन सर्वसाधारणको तर्फबाट जनस्वास्थ्यका उपायहरूलाई ध्यानमा राखि सावधानीका कार्यहरू अपनाउनु (कार्यान्वयन गर्नु) जरुरी छ । लकडाउनलाई तत्काल एक्कासी खुकुलो बनाउँदा विभिन्न स्तरमा हानीकारक असरहरू पर्ने हुँदा यसलाई चरणगत रुपमा खुकुलो पार्नु आवश्यक देखिन्छ ।

* Corresponding author, E-mail: sujanmarahatta@gmail.com; Tel.: +977- 9851126707

© RECAST/TU

1. Introduction

The total number of reported coronavirus cases in Nepal has reached 2300 with 278 cases recovered and 9 deaths till 4th of June 2020. In recent weeks, the epidemic has peaked with an increased number of new cases/admissions to hospitals. The highest number of cases- 288 cases, have been reported on a single day – 2nd of June 2020. These numbers are escalated by importation of cases from India, rising the number of local/community transmission (Ministry of Health and Population, 2020b). Many are stranded in border point while many have entered through informal channels.

Since, WHO has classified COVID-19 transmission as sporadic cases in Nepal (World Health Organization, 2020), increased cases have been reported from hotspots where active surveillance and containment measures are inadequate. The samples from risk zones have been collected and tested but detection of transmission/circulation of disease in the community has been an arduous process. The majority of cases, reported in Nepal are not based on symptoms of COVID -19. Nepal is facing the risk of COVID-19 spreading locally. This article explores measures that can be applied for post lifting plans (lifting the lockdown) in Nepal.

2. Methodology

This article adopts a descriptive approach. At first places, it explains the current situational status of COVID-19 in Nepal reviewing news articles and governmental sites. Secondly, it explores possible exit strategies for Nepal being based on evidence generated from national and international literatures.

3. Results and Discussions

3.1. Lockdown and its implication

An estimated 2.6 billion of the world's population is in some kind of lockdown (World Economic Forum, 2020). 'Lockdown' in particular is not a technical term but is widely used referring to quarantine measures placed on people to restrict movement asking people to stay at home (FutureLearn, 2020).

In Nepal, a country-wide lockdown came into an effect from 24 March till the 14th of June 2020. While lockdown remains the best possible public health intervention, its impacts on social, economic, and health aspects should not be overlooked. The long-term lockdown is expected to result in a secondary epidemic of mental stress, illness, and burnout (World Economic Forum, 2020).

As a result of this pandemic, 3 in every 5 employees including formal and informal micro, small and medium enterprises have lost their jobs in

Nepal. The majority of the labor force in Nepal has faced job cuts and losses. The tourism, trade, and foreign employment sector has been hard-hit and this condition could aggravate largely depending upon the extension of lockdown. The projected GDP growth rate before COVID is expected to decline below 2.5 percent in 2020 from 8.5 percent (Koirala, 2020).

According to the UN agency, an estimated 4000 children could die in Nepal in the next 6 months as a direct impact of the COVID-19 pandemic (The Kathmandu Post, 2020). On the other flip, the majority of health institutions are sealed and shut down. Patients of chronic diseases are not able to access essential health services. Education institutions are shut down resulting in a gap in education among students. The guidelines or working mechanism after shielding such an institution has not been planned.

As the focus has not been placed on new realities, nationwide lockdown in the longer term might be far worse than the expected benefit. However, the impacts on both ends cannot be balanced. Lockdown has been effective to flatten the curve, in many countries such as Germany, Singapore, and China (CBS News, 2020) but cases do not seem to level off in Nepal, because of overwhelming influx of returning migrants from India—a country hard hit by COVID-19. The influx of cases in the coming weeks is obvious but our current containment measures have only tried to push the curve. At present, our focus is to break the chain of transmission, reduce the number of cases, decreasing the severity of cases, and reducing the number of deaths. The actual/upcoming/ scenario could be awful but provided that strong quarantine measures and enhanced active monitoring are in place, the burden of COVID-19 can be reduced in our context.

Similarly, there is an acute need for rapid and robust testing followed by contact tracking with effective protocol in place. After two months of lockdown in place, it is now high time to reach a point where it makes sense to loosen up the restriction measures. But there has to be a step by step recovery. Beforehand, it is important to re-evaluate the existing lockdown measures/strategies creating a space for "Exit Strategy"

3.2. Recommendations and measures to consider an exit from lockdown

i. Extensive testing

Extensive testing has been a successful strategy observed in several countries like Singapore, Germany and South Korea to contain the transmission chain (Aurora Biomed, 2020).

Massive testing of the healthy and infected population in the community is quintessential to distinguish, to ensure they return to work safe and healthy, and others simply to get early treatment and prevent community transmission. The absence of aggressive testing would not be able to identify the infected to ensure isolation and treatment. Scaling up testing at a larger scale would lessen the restriction measures to be taken (Aurora Biomed, 2020). Though test, test, test has been applauded at the national level country lacks adequate testing resources and coverage. However, with test ramping up in current weeks, more cases are being reported.

The first case of COVID-19 was reported on 23rd January 2020. As of 4th June, 77967 PCR tests have been conducted which is quite low and still inadequate (Ministry of Health and Population, 2020b).

While the test kits were not reaching the population, who were suspected of COVID-19 in the border region of Nepal, member of parliaments were criticized for using the test kits for themselves to screen for COVID-19. At this stage, government should emphasize and extend the testing coverage to identify the cases, so that they can prevent the covert ongoing transmission at the community—the latter can lead to explosive outbreaks in coming weeks.

ii. Effective quarantine measures

For centuries, quarantine has been in use as an ancient and effective tool to prevent the spread of disease. With modern public health principles in place, quarantine can be a highly effective tool in preventing the spread of contagious disease (Cetron et al., 2004).

The government of Nepal has allocated different places at the national and local levels for quarantine purposes. All arrivals into Nepal are kept self-quarantined for 14 days. The second death case reported in Nepal took place in a quarantine of *Narainapur* in *Banke* (A. Poudel, 2020). Similarly, crowded and mismanaged quarantine facilities have been reported in Province 5 which now is one of the hotspots of COVID-19. This increases the high risk of transmission of viruses at the community level (M. Poudel, 2020). Appropriate safety measures need to be in place for effective quarantine compliance. The quarantine can be effectively combined with disease surveillance and monitoring for symptoms among persons quarantined which can subsequently help in timely referral and prevention of further transmission (Cetron et al., 2004). At the provincial level, the number of suspected cases is increasing while existing quarantine is not sufficient. It was equally important to supply necessary commodities like food, drinking water, clothes, and sanitation kits at facilities (M. Poudel, 2020).

iii. Active surveillance, contact tracking and tracing status

Contact tracing and tracking is a critical strategy to prevent further spread of COVID-19. Extending the contact tracking and tracing during this “peak/rise” of cases is crucial to halt the transmission chain of new infection and flatten the curve. Tracking new cases and contacts will eventually suppress the resurgence of community outbreaks at this point (CDC, 2020). The Government of Nepal has already proposed the Case Investigation and Contact Tracing Team (CICCT) for each provincial state (Ministry of Health and Population, 2020a). Despite the CICCT guideline in place, the process has been delayed and not yet implemented. For effective contact tracing, it requires people with appropriate training and skills. And this is a prime time to develop a trained workforce. The team should be mobilized as soon as possible for the timely detection of potential exposures and assist cases to isolate and further trace other cases who have been in close contact with them.

Adopting appropriate reporting tools along with data protection, robust analysis, and dissemination of case status is important. Continuous monitoring and assessment of contact tracing effort are crucial for new normal (CDC, 2020).

iv. Categorization of potential risk population

Targeted closure and shielding of vulnerable and at-risk populations such as in migrants, core case contacts, family members should be emphasized. The exposure level in terms of high, medium, low and no identifiable risk could be categorized based on the types of contact: household contact/direct contact of confirmed cases, travel from border points of India, International flight travels, frontline health workers exposed to COVID patients, security personal at border points, health work assistant (ambulance driver, assistant), laboratory personal. This should be followed by active case management and monitoring based on asymptomatic and symptomatic cases.

Protecting the vulnerable and allowing the healthy ones to carry out regular tasks could help the majority of the population to return to normal.

v. Health system capabilities

Currently, health care facilities in Nepal are overcrowded with patients and hospital beds are short supply. In the coming weeks, health care facilities will be overwhelmed with cases. The health care system of Nepal is already weak with fragile public health infrastructure. A short supply of protective equipment and under preparation of the health care sector has discouraged many health

professionals to work in the frontline.

There is a need to increase health care preparedness and readiness for effective management of cases (Adhikari et al., 2016; M. Poudel, 2020) Likewise, the expansion of the laboratory network for testing COVID-19, engaging both public and private hospitals is essential. Strengthening provincial/local health care system, resources essential for early identification, referral, isolation, and management of cases at a community level is another area which needs utmost attention (Marahatta et al., 2020). As the pandemic has already brought a wave of mortality in even the robust health systems, it is critical for Nepal to prepare and learn from the past disasters (including from these countries) for efficient preparedness and management (Adhikari et al., 2016, 2017, 2020; Adhikari and Mishra, 2016) Amidst these potential constraints that Nepal can face, at least in the nearest term, Nepal should form a capacity through a team of disease specialist (trained personnel), public health specialist, laboratory personnel, and logistics management team, akin to forming a disaster management capacity/workforce (Adhikari et al., 2016; Adhikari and Mishra, 2016; Adhikari et al., 2016). Indeed, such a workforce can remain as a reserve and 'ready to go' to the places where the outbreak of COVID-19 emerges. In the meantime, estimation of workforce at currently operating COVID-19 specialized health centers, and their constraints is essential so as to plan for the forthcoming days and weeks. One example of which is responding to the needs of these health facilities in terms of supplies and logistics such as personal protective equipment.

Given that Nepal's health system is already facing the constraints in fighting against the COVID-19 pandemic, it is a high time to collaborate with all the stakeholders including private health care providers, and non-governmental organizations for partnership in disease management (Koirala, 2020). In addition, although it might sound trivial, collaborating with other infrastructure such as hotels, schools, lodges, and restaurants are equally essential to curb the dire situation for people living in quarantine, health care workers, and the public health experts. The salient advantage of having these preparations (quarantine and isolation facilities) is that it can prevent community transmission including conflicts and stigma from the community. House owners, hotel owners and community members were found to discriminate the health care workers restricting them to stay at their place. Thus, there is a need of more concerted and coordinated actions from all sides, including those who are not directly associated with the health care institutions to ensure that the actions and efforts in fighting against the

COVID-19 pandemic occurs in unison (Adhikari et al., 2016, 2017, 2020; Adhikari and Mishra, 2019; Cash and Patel, 2020; Marahatta et al., 2020)

4. Conclusion

A total lockdown for a long time can never be a solution to the epidemic but people need to understand what it takes to be normal as before. The obvious long-term solution is a vaccine which might take some time (from months to years). Phase-wise measures should be employed while sudden loosening of restriction might result in detrimental effects. Communities must be adjusted to 'new normal' where people need to avoid mass gatherings, events, and voluntarily limit contact. While adjusting to new normal, people should adhere to public health measures, principles, and restrictions and the government needs to educate, engage, and empower people (The National Bureau of Asian Research, 2020) Lifting measures can be effective only when people understand the role of all the above-mentioned measures and believe that their compliance is justified and they will be supported during the whole period of recovery (Cetron et al., 2004).

Long term social distancing measures need to be in place to prevent the outbreak of the disease in the future. Transmission and monitoring should be closely aided with test, trace, track, quarantine, and management. Redefining a complete lockdown is a flexible version towards new normal but not a state of relaxing (Doherty 2020; The National Bureau of Asian Research, 2020).

The issue is Not-Do we reopen? but how we reopen. Political leaders, health care experts including broad community stakeholders from both government and outside need to have a meaningful engagement to ensure that the evidenced based decision is made, which is socially and culturally relevant and acceptable (Adhikari and Mishra, 2019). A blend of science tailored to Nepalese context can be appropriate for Nepal rather than burrowing the measures that work elsewhere (Cash and Patel, 2020).

Ethical approval

Not required given the nature of the article.

Funder information

No funding.

Competing interests

None declared.

References

- Adhikari B, Bhandari PM, Neupane D, Mishra SR. A retrospective analysis of mortality from 2015 Gorkha Earthquakes of Nepal: evidence and future recommendations. *Disaster medicine and public health preparedness*. 2020 Mar 26;1-7. <https://doi.org/10.1017/dmp.2020.12>
- Adhikari B, Mishra SR, Marahatta SB, Kaehler N, Paudel K, Adhikari J, Raut S. Earthquakes, fuel crisis, power outages, and health Care in Nepal: implications for the future. *Disaster medicine and public health preparedness*. 2017 Oct;11(5):625-632. <https://doi.org/10.1017/dmp.2016.195>
- Adhikari B, Mishra SR, Raut S. Rebuilding earthquake struck Nepal through community engagement. *Frontiers in public health*. 2016 Jun 13;4:121.
- Adhikari B, Mishra SR. Culture and epidemiology of diabetes in South Asia. *Journal of global health*. 2019 Dec;9(2). <https://doi.org/10.7189/jogh.09.020301>
- Adhikari B, Mishra SR. Urgent need for reform in Nepal's medical education. *The Lancet*. 2016 Dec 3;388(10061):2739-2740. [https://doi.org/10.1016/S0140-6736\(16\)32423-0](https://doi.org/10.1016/S0140-6736(16)32423-0)
- Aurora Biomed. COVID-19 Updates - The Importance of Extensive Testing - Aurora Biomed. 2020. <https://www.aurorabiomed.com/covid-19-updates-the-importance-of-extensive-testing/>
- Cash R, Patel V. Has COVID-19 subverted global health?. *The Lancet*. 2020 May 395(10238): 1687–1688. [https://doi.org/10.1016/s0140-6736\(20\)31089-8](https://doi.org/10.1016/s0140-6736(20)31089-8)
- CBS News. Flatten the curve: Here's how countries have fared since lockdown - CBS News. 2020. <https://www.cbsnews.com/news/flatten-curve-coronavirus-countries/>
- CDC. Case Investigation and Contact Tracing: Part of a Multipronged Approach to Fight the COVID-19 Pandemic | CDC. 2020. <https://www.cdc.gov/coronavirus/2019-ncov/php/principles-contact-tracing.html>
- Cetron M, Maloney S, Koppaka R, Simone P. Isolation and quarantine: containment strategies for SARS 2003. *Learning from SARS: Preparing for the Next Disease Outbreak: Workshop Summary*. Washington (DC), National Academies Press, US 2004 Apr 26:71-83. <https://www.ncbi.nlm.nih.gov/books/NBK92450/>
- Doherty B. The exit strategy: how countries around the world are preparing for life after Covid-19 | World news | The Guardian. 2020. <https://www.theguardian.com/world/2020/apr/19/the-exit-strategy-how-countries-around-the-world-are-preparing-for-life-after-covid-19>
- FutureLearn. What Is Lockdown? - Blog - FutureLearn. 2020. <https://www.futurelearn.com/info/blog/what-is-lockdown>
- Koirala KR. Three in every five employees lost their jobs in Nepal due to COVID-19 crisis. *My Republica*. 2020. <https://myrepublica.nagariknetwork.com/news/every-three-in-five-employees-lost-their-jobs-in-nepal-due-to-covid-19-crisis/>
- Marahatta SB, Paudel S, Aryal N. COVID-19 Pandemic: What can Nepal do to Curb the Potential Public Health Disaster?. *Journal of Karnali Academy of Health Sciences*. 2020 Apr 7;3(1)1–13. <https://doi.org/10.3126/jkshs.v3i1.28374>
- Ministry of Health and Population, N. Case Investigation and Contact Tracing Team (CICCT) Mobilization Guideline 2077. 2020a. <https://www.publichealthupdate.com/case-investigation-and-contact-tracing-team-cicct-mobilization-guideline-2077/>
- Ministry of Health and Population, N. Corona Info- Ministry of Health and Population. 2020b. <https://covid19.mohp.gov.np/#/>
- Paudel M. Quarantine facilities in Province 5 crowded and mismanaged. *The Kathmandu Post*. 2020. <https://kathmandupost.com/province-no-5/2020/05/19/quarantine-facilities-in-province-5-crowded-and-mismanaged>
- Poudel A. Nepal reports second Covid-19 death. *The Kathmandu Post*. 2020 May 17. <https://kathmandupost.com/province-no-5/2020/05/17/nepal-reports-second-covid-19-death>
- The Kathmandu Post. As Covid-19 continues to weaken the health system, an estimated 4,000 children could die in Nepal in the next six months, UN agency warns. 2020. <https://kathmandupost.com/national/2020/05/13/as-covid-19-continues-to-weaken-the-health-system-an-estimated-4-000-children-could-die-in-nepal-in-the-next-six-months-un-agency-warns>
- The National Bureau of Asian Research, N. The “New Normal”: Thoughts about the Shape of Things to Come in the Post-Pandemic World - The National Bureau of Asian Research (NBR). 2020. <https://www.nbr.org/publication/the-new-normal-thoughts-about-the-shape-of-things-to-come-in-the-post-pandemic-world/>
- World Economic Forum. COVID lockdown is world's biggest psychological experiment | World Economic Forum. 2020. <https://www.weforum.org/agenda/2020/04/this-is-the-psychological-side-of-the-covid-19-pandemic-that-were-ignoring/>
- World Health Organization, (WHO). Coronavirus disease (COVID-19) Situation Report-132. 2020. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200531-covid-19-sitrep-132.pdf?sfvrsn=d9c2eae2_2
-