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COVID-19 AND CITIES

NEPAL COUNTRY REPORT

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List of Abbreviations

CCMC	COVID Crisis Management Center
CDO	Chief District Officer
CICT	Case Investigation and Contact Tracing
EDCD	Epidemiology and Disease Control Division
EMDT	Emergency Medical Deployment Team
FCHVs	Female Community Health Volunteers
GoN	Government of Nepal
HLCC	High Level Steering Committee
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
LMIC	Low-to-Middle-Income Country
MoFAGA	Ministry of Federal Affairs and General Administration
MoHP	Ministry of Health and Populations
MoSD	Ministry of Social Development
PPE	Personal Protective Equipment
RDT	Rapid Diagnostic Kit
SARS	Severe Acute Respiratory Syndromes
SC	Supreme Court
STIDH	Shukraraj Tropical and Infectious Disease Hospital
WHO	World Health Organization

Executive Summary

This study aimed to understand the response to COVID-19 in Nepal from January to August 2020 through review of mass media content and relevant policies published during the period. We identified three different news media as data source for the study based on their coverage, diversity of language, and access whereas 71 policy documents related to COVID-19 were identified for the study. The study centred around the responses, issues, and lessons with a focus on urban/city health system and urban population. We used qualitative method using framework analysis approach for the study. The major themes explored from the study were on governance, infrastructure development, capacity development and mobilization of the human resources, preparation of the health care system and impact of COVID-19.

The study found that country struggled to maintain effective governance while responding to COVID-19. Emergency like COVID-19 demands promptness in decision making and execution, however, there were different issues of the governance reported in the news media. More than a month after the detection of the first COVID-19 case, High Level Coordination Committee (HLCC) was formed at the federal level to respond the prevention and control of the infection. There was no clarity of role at the subnational level despite having government at the provincial and local level. These levels were primarily executing the decision from the committee without any contribution in the decision-making process in the initial period of response. There were also times the decisions were made from council of ministers rather than from the committee, and later in June COVID-19 Crisis Management Center (CCMC) overtook the role of HLCC. On 1 April 2020, CCMC were formed at the provincial and local level too, but invoking six decade long infectious disease act, forming the CCMC at the district level and promoting their role undermined the core value of federalism. When government contracted out the procurement to a private firm to obtain the PPE like mask and diagnostic kits, it widely drew criticism across all media for not adhering to the procurement act and overseeing possible corruption during the purchase. Although the contract was pulled out followed by widespread criticism in media.

Nationwide lockdown to control spread of COVID-19 resulted the shutting down of businesses across all sectors that left hundreds of thousand people jobless. This unemployment triggered mass exodus particularly people who worked as daily wage labourer from major cities

including Kathmandu. Besides, street vendors, poor people and people with disabilities in city areas were hit hard by the restrictions imposed to contain COVID-19. Slum settlements which are prone to outbreak due to overcrowding, poor housing, inadequate sanitary facilities etc., were never under the radar of government for COVID-19 measures.

Government experienced challenges to implement the lockdown measures and travel restrictions due to its impact on livelihood of the people. Government lifted the first lockdown after implementing for nearly 3 months, afterwards COVID-19 cases surged along with the influx of returnee migrant workers from India. With rising number of cases and limited resources, government faced severe difficulty in case investigation and contact tracing, and quarantine management.

Government designated the public hospitals into COVID hospital in major city areas across the country, but this had impact on other routine health care services where health facilities and community reported that the key public health programs like immunization, maternal and child health care services were disrupted. Lack of PPE and training among the health care workers at other health care institutions created stigma around COVID-19 that also exacerbated the situation. Despite the announcement from the MOHP that all the mobilized front-line workers in COVID-19 prevention and management would receive financial protection and incentives, much news across the nation reported its ineffective implementation that affected the morale of the workers. The lack of health system readiness like unavailability of medical drugs and equipment, and unfulfilled sanctioned position surfaced during the crisis. In resource-poor setting like Nepal where private sector is one of the major service providers, government did not take any initiative to engage with them and undermined the role of private sector in early stage. After the first lockdown was lifted in late May, the cases rose during the period of June-August. The incidence of cases spiked up from May to early July, and afterwards cases started to decline. Later on, following increase of COVID-19 cases from August, government came up with directives to engage with private sector in diagnosis and treatment of COVID-19 cases. Information on epidemiological trends specifically focusing on hospitalization and deaths rate at all three tiers was not available. Thus, COVID-19 posed serious challenges where government struggled in pandemic response plans and to steer the health system ensuring its continued functioning. The government developed and implemented policies one after another to address emerging problems. However, its

effective implementation remained a key question to be answered. As the study timeline is Jan-Aug 2020, any further development on system response or challenges are not reported in this study.

Contents

1. Introduction

Globally, urbanization is an evident process and more than half of the world population now reside in urban areas. [1] Nearly one billion of the population lives in slums, often informal settlements and is exposed to unhealthy and life-threatening conditions. Urbanization affects the spread of infectious diseases like severe acute respiratory syndrome (SARS), Ebola, and COVID-19 in both developed and developing countries, in wealthy enclaves as well as informal settlements. [2] The density of inhabitants and the close contact between people in urban areas are potential hot spots for rapid spread of emerging infectious diseases such as SARS1-CoV-1 [3] and more recently SARS-COV-2 which causes COVID-19. In a recently published response plan for COVID-19, UN-Habitat underlined the urban-centric character of the infectious disease. More than 1,430 cities are affected by the pandemic in 210 countries and well above 95% of the total cases are in urban areas. [4] Among city inhabitants worldwide, the current COVID-19 crisis is likely to have disproportionately damaging effects on the lives of slum dwellers compared to other urban residents, particularly those residing in low- and middle-income countries (LMIC). [5] The urban slum environment is fertile ground for infectious diseases, due in large part to overcrowded housing conditions, lack of availability of treated water, and lack of adequate sanitation facilities. Dwellers often live-in cramped conditions where it is difficult to socially distance and are more likely to be dependent on a daily wage. [6] Further, the location of slums is often outside of the city centres, in more hazardous locations and the population feels a lack of social and economic opportunities compared with other residents. In addition, the health impacts of COVID-19 in slums are intensified by poor access to health services within those settings.

In Nepal, the urban population jumped from 14% of the total population in 2001 to 38.8% in 2016. [7] The slum population as a percentage of urban population was 54.5% in 2014. [8] Squatter settlements are rising in fast-growing cities such as Kathmandu and Pokhara, as well as in urban areas such as Dharan, Birganj, Bharatpur and Mechinagar in Nepal. [7] These communities sometimes called ''*Sukumbasi*'' (landless squatters) are concentrated on the banks of urban and peri-urban rivers, and can be subject to health and sanitation challenges

due to poor quality housing and inadequate sewage, drainage, and drinking water facilities.[9]

Photo 1: a settlement nearby Manohara river, Bhaktapur ©HERD International

Only half of the population living in slums have toilet [10] while most have inadequate access to safe drinking water [11] and health services [12] and exhibit behavioral risk factors (physical inactivity, dietary diversity, alcohol consumption) making them more vulnerable to NCDs. [13] As a result, these areas are prone to epidemics in Nepal, particularly affecting the poor and marginalized the most. [14] On 13 Jan 2020, WHO announced COVID-19 as public health emergency of global concern after evaluating the cases reported from China. Later, on 23 Jan, first COVID case was confirmed in Nepal. Cross-border mobility mainly through border city areas and incoming international flights to Kathmandu were primary challenges for the government. Particularly big cities like Kathmandu, Pokhara, Biratnagar, Birgunj, Butwal, Nepalgunj and Dhangadi are the most dynamic in terms of mobility, economy, technology, transportation and cultural assimilation. Besides, densely populated settlement and linking hub for migrants, tourists and people from remote areas form important characteristics of the urban area. With more than 50% of the Nepalese population now residing in urban areas, an effective government response in those areas to COVID-19 is vital.

Objectives

The general objective of the study is to understand the COVID-19 response measures by government, and the impact of COVID-19 on routine health care services and socio- economic state of people, particularly urban-poor based on review of media and policy documents since January to August 2020.

Specific Objective

1. To describe the timelines and trajectory of the Covid-19 pandemic in Nepal during January to August 2020.
2. To assess the prevention and control measures introduced by government including governance mechanism, health financing, HR management, and health system preparedness in federal context focusing the urban area.
3. To identify the existing challenges in implementing the response measures in Nepal.
4. To explore the impact of COVID- 19 on delivery of routine health care services
5. To assess the impact of COVID-19 on the socio-economic life of people, focusing on the urban poor community.

2. Methods

Study design

This is a case study of the first wave of the COVID-19 pandemic in Nepal including the government response that covers period from 1 January 2021 to 31 August 2021. The study combines review of media coverage on COVID-19 and policies issued by the government to respond the pandemic.

Data collection methods

Review of Media reports

We reviewed reports related to COVID-19 published in media to understand COVID-19 response by government at different levels in Nepal focusing on the urban areas. For the purpose, selected online and print media in Nepal were reviewed. A priori thematic framework was developed reflecting the events/news that occurred over the 8-month period to enable us to perform comprehensive review and analysis for the media contents. We purposively

selected three national news media outlets namely The Kantipur Daily, The Himalayan Times Daily, and Onlinekhabar, which together reflect different characteristics such as lingual diversity, media types and popularity of the news media. The Kantipur Daily is widely accessed print daily in Nepali language, The Himalayan Times is English print daily and Onlinekhabar is a popular online news portal in Nepali and English language. The news articles on COVID-19 published in these media between January-August 2020 were reviewed for the study.

Table 1 : Selection criteria for news media and search strategy in the study

News media	**Lingual Diversity**	**Type**	**Popularity**	**Key words**
The Kantipur Daily	Nepali	Print	Nationwide largest circulation	COVID, Corona virus, Pandemic, Epidemic, Emergency, Crisis, Quarantine, Response, Isolation, Health services, PCR test, Rapid Diagnostic Kit (RDT), MoHP, Health facilities, hospitals, lockdown, travel restriction
Onlinekabar	Nepali and English	Online new portal	Highest traffic in Alexa ranking	
The Himalayan Times	English	Print	Widely circulated English daily	

Review of Policies

Policy review included the review of policies, directives and guidelines developed and issued by the government to respond COVID-19 during the study period. We visited government websites to access the COVID-19 policies [Table 2] that were developed and implemented by federal, provincial and local government.

Table 2: Websites used for Policies Review

Source	Available URL
Government of Nepal, Ministry of Health and Population, Health Emergency and Disaster Management Unit (HEDMU) and Health Emergency Operation Center (HEOC)	https://heoc.mohp.gov.np/update-on-novel-corona-virus-covid-19/
Government of Nepal, Ministry of Health and Population, Department of Health Services, Epidemiology and Disease Control Division (EDCD)	http://www.edcd.gov.np/news/links-for-covid-19-news-and-information
Government of Nepal, Ministry of Health and Population, Department of Health Services, National Public Health Laboratory	https://www.nphl.gov.np/page/ncov-related-lab-information
Government of Nepal, Ministry of Federal Affairs & General Administration	https://mofaga.gov.np/
Government of Nepal, Ministry of Home Affairs	https://www.moha.gov.np/
Public Health Update	https://publichealthupdate.com/category/nationaldocuments/

Data collection process

Media review

We reviewed all news media items including news, editorials, opinion piece, interviews and letter to editor published in the selected news media. A list of key words was developed to screen the titles of news media items as highlighted in Table 1. However, during the screening process there were many news items with titles that had general terms excluding the key words

describing the COVID-19 issues. So, we revised the process where researcher's judgement apart from the key words formed the basis to screen the news media items. All information related to health sector response and preparedness to COVID-19 in Nepal reported by selected media were reviewed. Similarly, we also reviewed social and economic impacts of COVID-19 and lockdown especially in relation to vulnerable and marginalized population. We developed a framework for extraction and documentation of information using an excel spreadsheet. We also developed a how-to guide and provided orientation on the framework to the review team to develop a common understanding and maintain uniformity in data extraction. A team of five reviewers from HERD International were involved in reviewing selected media and extracting information according to the framework. We adopted a framework approach to guide the team regarding the review process and to maintain uniformity for data extraction. The major themes developed were based on the six building blocks defined by WHO and further sub-themes were generated relevant to COVID-19, which were updated as we progressed with the review. We also looked at the impact of COVID-19 on the socio-economic life of the community people, focusing on the urban poor.

Policy Review

We identified 83 documents on policy, guidelines and directives published in websites mentioned in Table 2. After listing out all the available COVID-19 related policies, twelve documents focused particularly on technical and laboratory process such as conducting COVID-19 testing, Ayurveda and alternative medicines, were excluded for further review as the review process was focused on public health response. Thus, a total of seventy-one policy documents were included for the policy review process.

We reviewed all policies, directives and guidelines developed by three tiers of the government during the study period.

Data extraction and analysis methods

The HERDi internal team comprised of eight-members who discussed and clarified key objectives of the research and methodology to be used. Thereafter, a list of priori themes/sub-themes were developed. Based on an initial review of 10 news articles from each media, the review framework was revised. Five of the team member were involved in extraction of information under the identified themes/sub-themes in the excel sheet. Routine review and

update meeting were conducted between the review team and core team members. In the meeting, team discussed problems/challenges they faced during the data extraction, agreed on emerging themes, and ensured that uniformity is maintained while coding the data. The process involved detailed reading of the extracted information and were organized under multiple themes/sub themes. We colour-coded the extracted data.

Likewise, for policy review, a separate framework was developed. We typed/translated/edited the selected policies as most of the documents were in image and pdf format and not compatible for extraction in NVivo, and MS Word. We thoroughly reviewed and extracted data, defined themes and organized them under various themes and sub themes using NVivo.

Methods of data analysis

The media review used the framework analysis method where priori themes and emerging themes were organized and analyzed to answer the study objective. Annex 1 details the themes generated for the study that were grouped and categorized to understand COVID-19 responses by government at different levels in Nepal focusing on the urban areas. The major themes emerged from the review are shown in Table 1.

Table 2: Identified major themes and subthemes from the media review.

Sub- themes	Themes
Steering mechanism for COVID-19 response	
Lockdown, travel restriction and border check	Governance
Decentralized response to COVID-19	
Risk communication	
Reaching the unreached	
Physical Infrastructure	
Health workforce	Preparing health care system
Health financing	
Case investigation and contact tracing	
Quarantine of exposed individuals to COVID-19 Case	Prevention and management
Isolation of suspected COVID-19 cases	of COVID-19 transmission
Treatment services of COVID-19	
Disruption of routine health care services	

Sub- themes	Themes
Community behaviour amidst COVID-19 stigma	Impact of COVID-19
Impact on psychosocial wellbeing	
Impact on livelihood	

Likewise, policy documents were also analysed using thematic framework analysis approach. The data were coded using a qualitative software Nvivo under the framework and processed iteratively with regular discussion among the review team members. All the extracted data in Nvivo was transferred to MS Word, and then it was summarized and organized under defined themes and sub themes.

3. Results /Findings

3.1 Statistics of COVID-19 cases

Figure 1 depicts the cumulative distribution of COVID-19 cases and deaths, from January-August 2020. This also shows various important events that occurred during the period. After the first lockdown was lifted in late May, the cases rose throughout the period of June-August. The incidence of cases spiked up from May to early July, and afterwards cases started to fall gradually. Later from August, the cases again started to increase. This fluctuation in number of cases could be the result of reduced number of testing throughout the country as per the amended COVID-19 testing guideline approved by Ministry of Health and Population (MoHP) on 2 June 2020 which mentioned that no tests are required for asymptomatic cases in quarantine. [15] As shown in Figure 1, there is also a possible association between the lifting up of lockdown measures and surging of COVID cases. Moreover, there was still a high flow of migrant workers entering Nepal particularly from India, that could also have resulted in increased number of cases. With increased incidence of the COVID-19, government announced a second lockdown in late August.

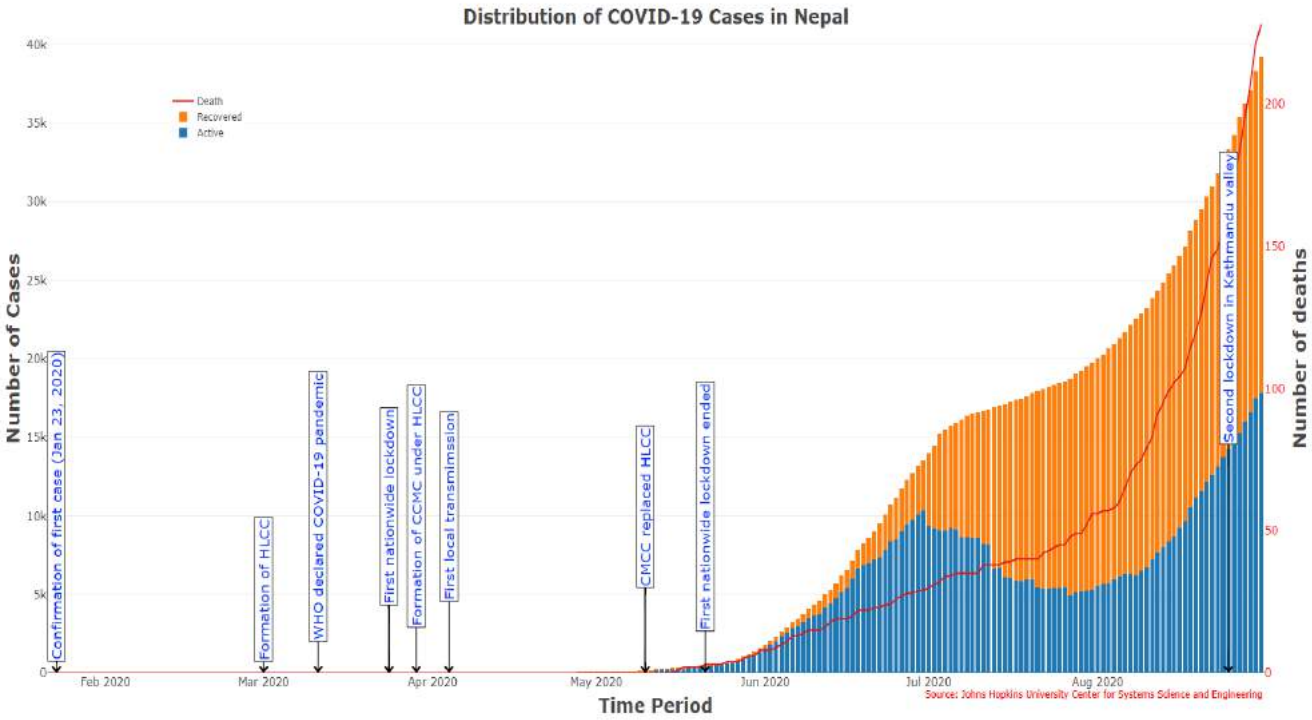


Figure 1: Distribution of COVID-19 cases in Nepal from January-August 2020

Recently updated data from the MoHP shows that by 27 January 2021, a total of 268,049 COVID-19 cases were diagnosed. Figure 2 shows the progression of COVID-19 cases from January 2020 to January 2021 according to different provinces. The curve reached its peak during the October, a time when widely celebrated festivals like *Dashain, Tihar* and *Chhath* took place in Nepal. Bagmati province, where the capital city Kathmandu lies, reported a high number of cases than all other provinces in total. Government had relaxed restriction on transportation in this festive period by allowing public transportation means to operate throughout the country. However, there were still travel restrictions at border transit point. In Kathmandu, restriction was eased by allowing public transportation to operate based on the rotation of odd and even number. In the same month, government issued directives and guidelines on air lifting COVID-19 patients, lab testing (amended), validation protocol for COVID-19 diagnostic items, dead body management (amended).

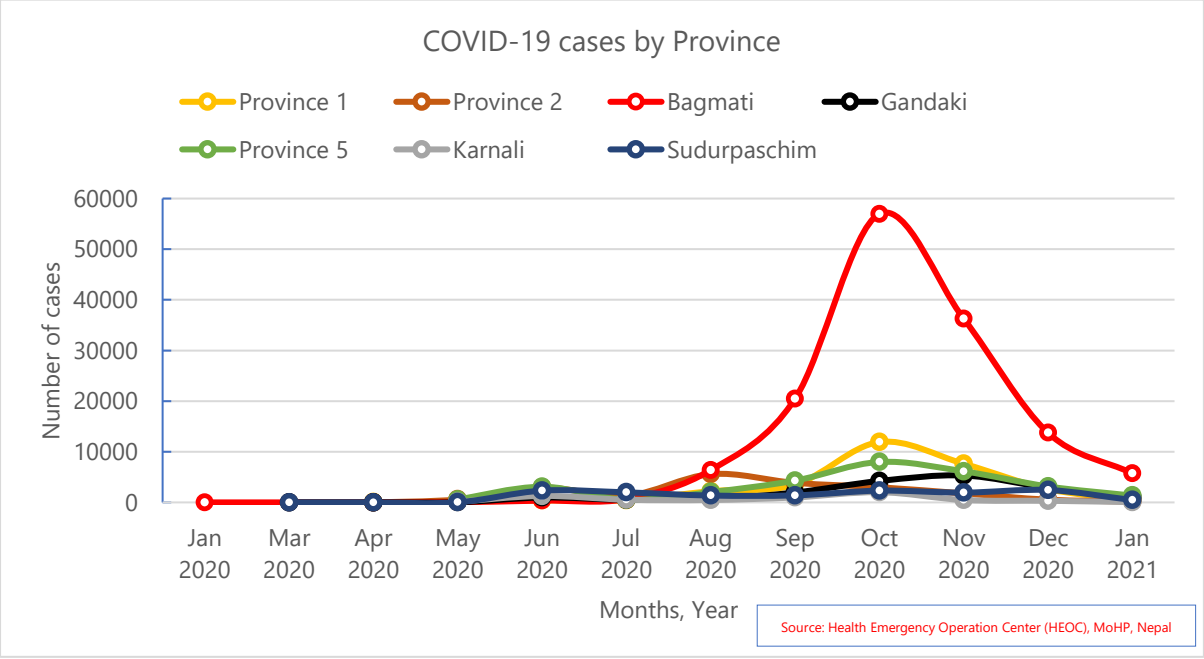
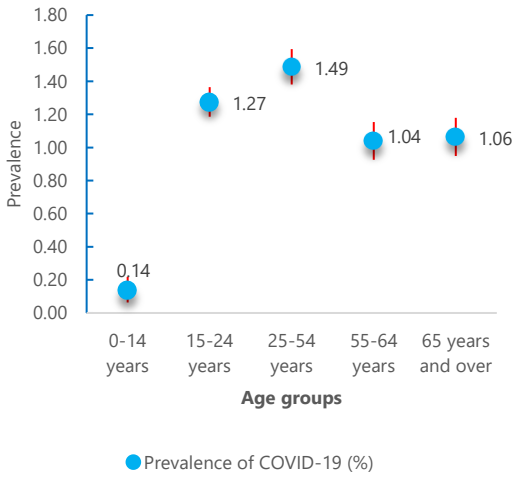


Figure 2: Distribution of COVID-19 cases by province from January 2020-January 2021

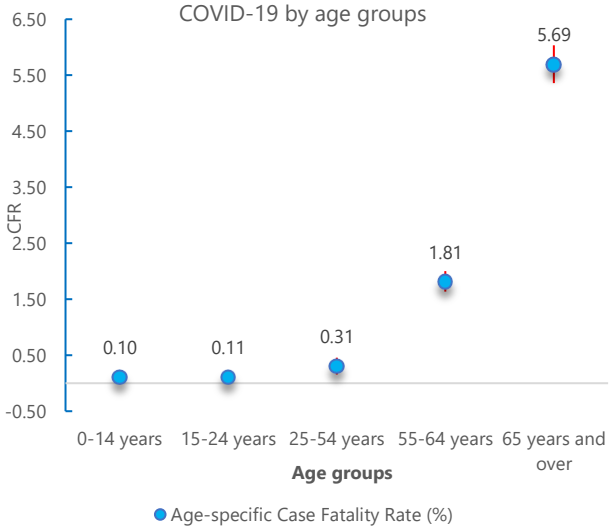
The overall prevalence of the COVID-19 infection was nearly 1 per 100 populations during the period. Figure 3 reports the prevalence of the infection according to different age groups. The highest prevalence was seen in 25-54 years age group (1.5 per 100 population) which is the working age population. Figure 4 depicts the case fatality according to the age groups.

Figure 3: Prevalence of COVID-19 by age groups



Source: HEOC, MoHP, Nepal

Figure 4: Age-specific Case Fatality Rate (CFR) of COVID-19 by age groups

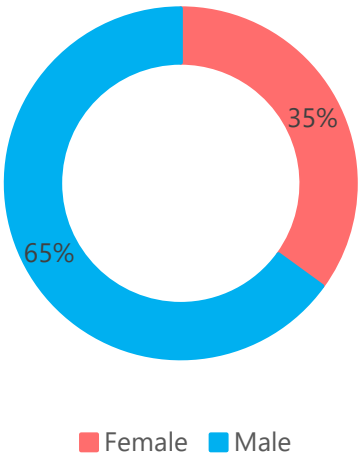


Source: HEOC, MoHP, Nepal

The data shows that there was higher fatality for older groups particularly 65 years and above age group (5.7 deaths per 100 cases).

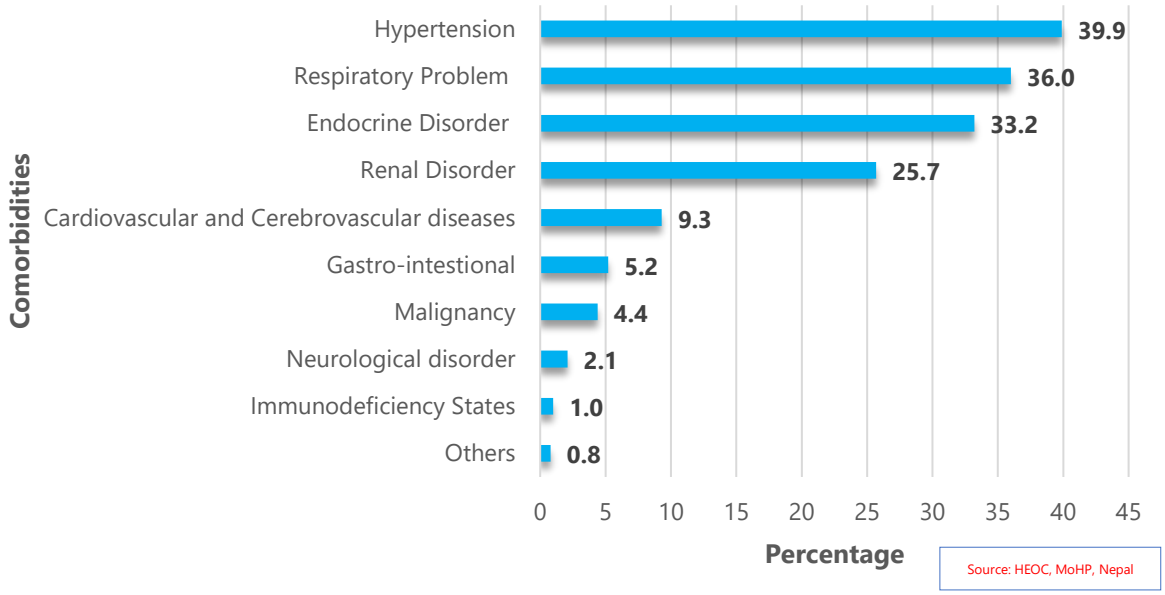
Sex disaggregated data reported that of the total reported COVID-19 cases, the highest proportion was observed in male (65%). There were altogether 2017 deaths till 26 January 2021, and most of the deaths (97%) were at the hospitals whereas deaths were also reported from home, on the way to hospital, and isolation and quarantine centers as shown. All the COVID-19 related deaths were associated with comorbidities, mostly non communicable diseases. Nearly 40% of the deaths were associated with hypertension followed by respiratory problem (36%) and endocrine disorder (33%) (Figure 6).

Figure 5: COVID-19 cases by Sex



Source: HEOC, MoHP, Nepal

Figure 6: Comorbodities associated with COVID-19 deaths



3.2 System Response to COVID-19

This section discusses the measures implemented by the government of Nepal (GoN) to prevent and control the spread of COVID-19 infection. Response measures cover governance mechanism, health financing, preparing the health system, and prevention and control measures for COVID-19.

3.3.1 Overview of policy action measures

After the first COVID-19 case was confirmed on 23rd January 2020 in Nepal, the GoN took nearly two months for commencing the policy formulation process in response to COVID-19 pandemic in the nation. After the declaration of second COVID-19 case in the country on 17th March 2020, the GoN declared suspension of all international flights and nationwide lockdown. Since then, the government developed ninety policy documents (policies, guidelines, directives etc), including the new and amended versions for COVID-19 preparedness and response till December 2020 in which majority of policies were published from March to June 2020 while fewer policies were published from July to November 2020, no document was published in December 2020.

On 15 March 2020, while the country was in the first stage of COVID-19 transmission, the MoHP developed screening guideline named as "Key actions to be taken against COVID-19 infection". [16] With reference to World Health Organization (WHO) and National Health Training Center, MoHP published a handbook titled "Introduction to Novel Corona Virus Disease (COVID-19)" with an aim to improve the understanding of health workers about the infection. [17] Other policy documents published during March were on screening COVID 19 patient, case investigation and contact tracing (CICT), quarantine, action plan, and training/orientation for health professionals.

With the announcement of first locally transmitted case in *Kailali* district on 4 April 2020, the GoN formulated several policies and guidelines in the same month regarding lab testing, COVID-19 clinical management, dead body management, infection prevention and control (IPC), volunteer mobilization and relief packages.

As the cases started to spike from May, the government developed other policies and guidelines during the month on the engagement of private laboratories, national testing guidelines (amended), Human Resource for Health (HRH) management, management of COVID-19 and non-COVID-19 services, IPC, health services in quarantine and repatriation of Nepali citizens. In June, the government formulated/revised guidelines on dead body bmanagement, isolation management, IPC, private lab testing, support received by government, lockdown management, HRH mobilization (amended), and CICT team mobilization. Similarly, the government also prepared guideline for engaging private health facilities for COVID-19 management to respond rapid surge in COVID-19 cases.

In July 2020, policies and guidelines related to home quarantine, health care waste management and COVID-19 testing guideline (amended) were developed. The government also prepared guideline regarding public health criteria to be followed during feast and festivals for preventing and controlling COVID-19 infection in August 2020, in preparation of the possibility of rapid transmission during major festivals in September and October. Likewise, during October 2020, the government developed guidelines on air lifting COVID-19 patients for their treatment and validation protocol for COVID-19 diagnostic items and amended national testing guideline. Besides, it also revised the guideline on dead body management and declared that COVID-19 testing after death is not required.

Followed by the media reports that COVID-19 deaths were frequently reported among the individuals who were under home isolation, government formulated policy for providing isolation kits to individuals living in home isolation and also developed the guideline for volunteer mobilization in the community to monitor the regulation of home isolation rules and public health criteria in November 2020.

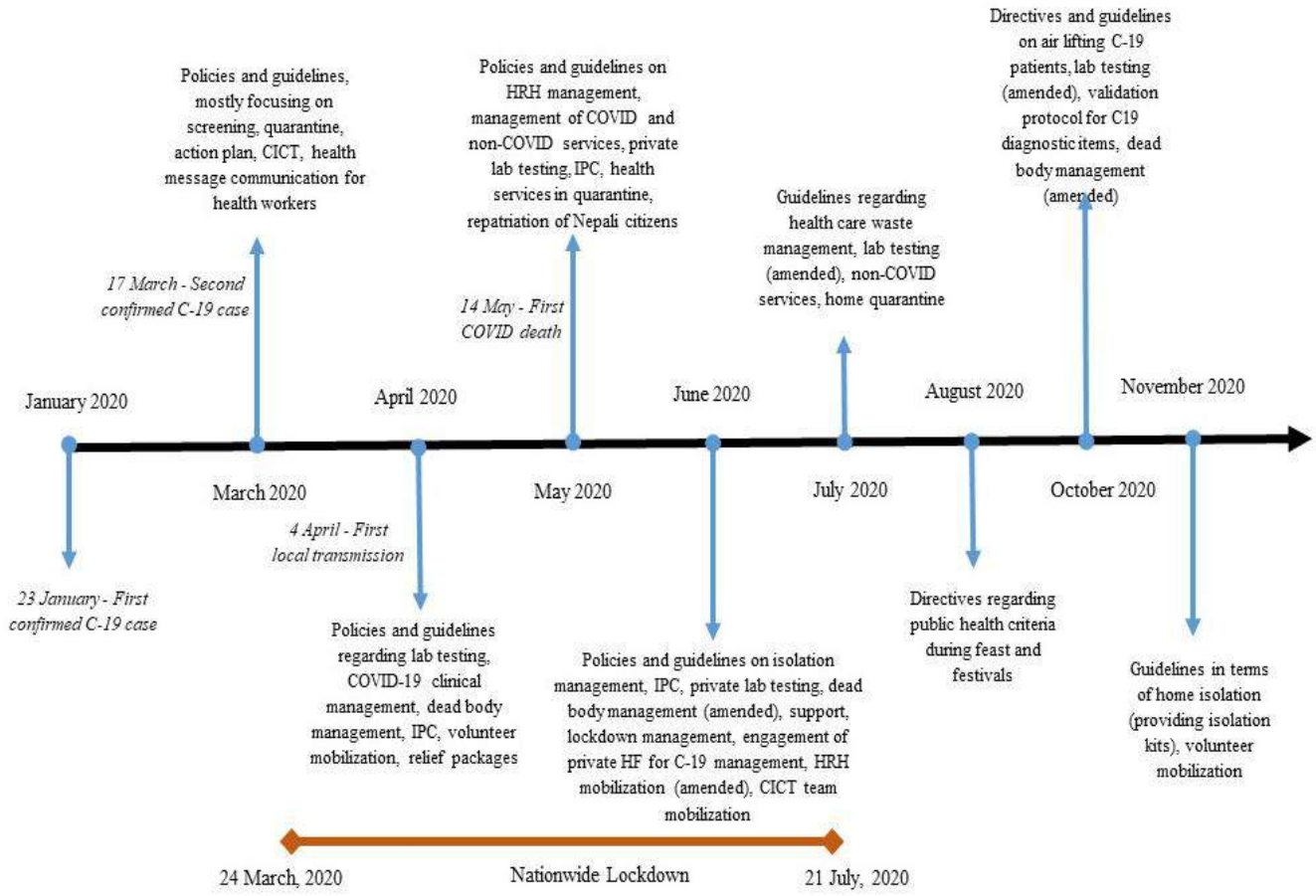


Figure 7: Timeframe of the development of policies and guidelines in Nepal

3.3.2 Governance

Steering mechanism for COVID-19 response

As the COVID-19 infection struck globally, Nepal also started experiencing surge in COVID-19 cases. Government of Nepal took several decisions for preparedness and response to COVID-19. In this regard, Ministry of Federal Affairs and General Administration (MoFAGA) published "Decisions of the Council of Ministers of the GoN regarding COVID-19 issue" on 3 April 2020 which mentioned about the formation of COVID-19 Crisis Management Center (CCMC) at federal, provincial and local level to make COVID-19 response effective. It also stated about the formation of Direction Committee for directing overall work of CCMC and Facilitation Committee for facilitating the work of CCMC. [18] Likewise, MoFAGA issued a circular on "Essential Management for Coronavirus (COVID-19) Preparedness and Response" on 22 March 2020 clearing ways for the formation of local level coordination committee and ward level coordination committee for mobilizing health workers and FCHVs. It further mentioned about need for compliance in the health message communication to the MoHP guideline, provided instruction on establishment of immediate referral system, monitoring of health desk at entry points, self-quarantine and physical distancing. [19] The overall COVID-19 management and response structure is shown in *Figure 8*. The COVID-19 management and response structure of federal level is outlined in *Figure 9* whereas COVID-19 management and response structure at sub-national levels is illustrated in *Table 2*. And, CCMC management structure is shown in *Annex 1*. [18–20]

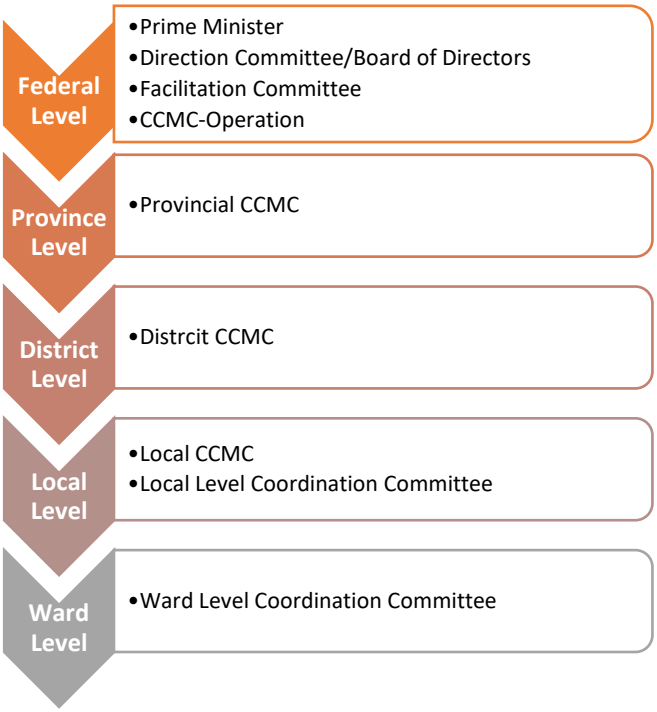


Figure 8. Overall COVID-19 management and response structure

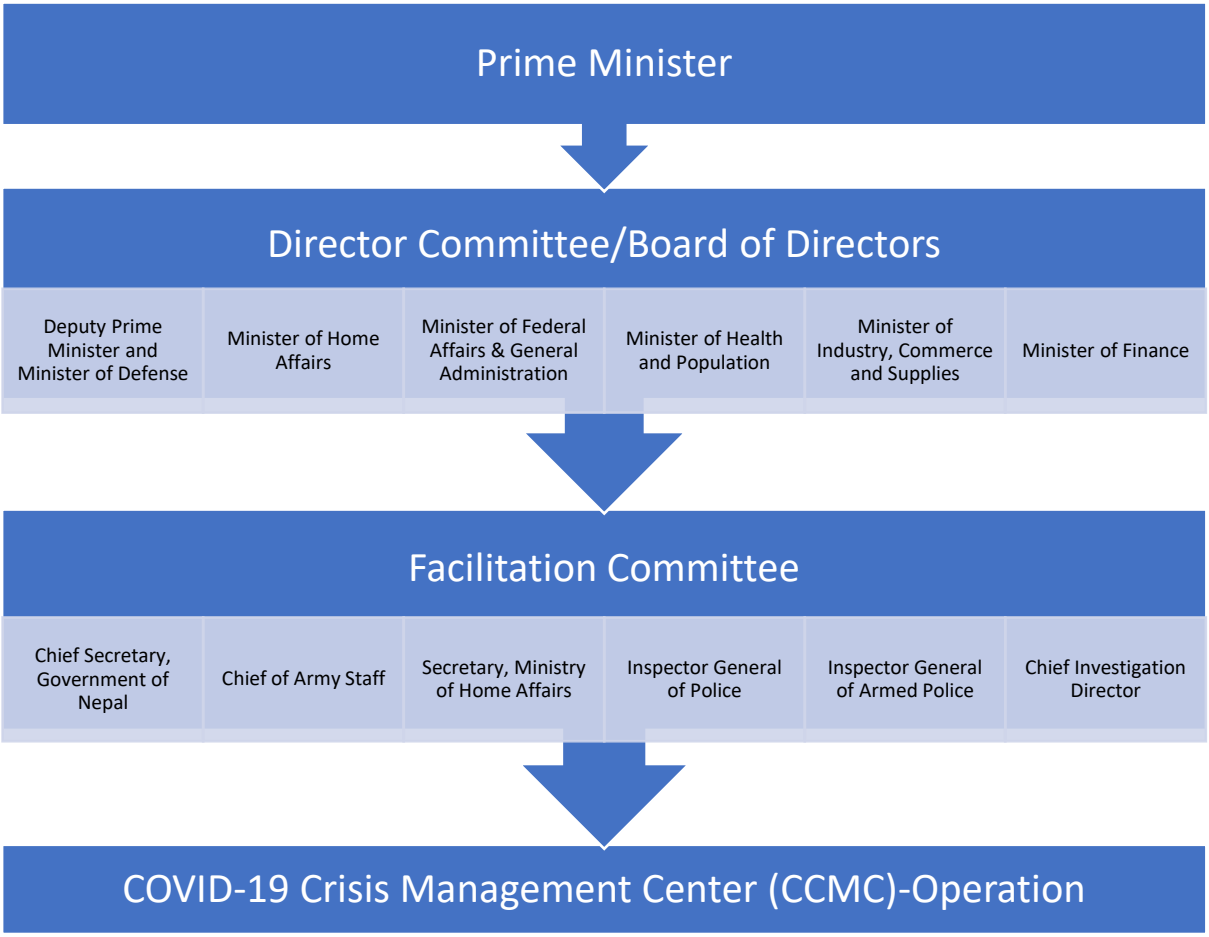


Figure 9. COVID-19 management and response structure at federal level

Table 3. COVID-19 management and response structure at sub-national levels

Sub-national Levels	COVID-19 management and response structure	
	Name	**Composition**
Provincial Level	Provincial CCMC	• Chief Minister • Minister of Social Development • Minister of Internal Affairs and Law • Minister of Economic Affairs and Planning • Chief Secretary • Chiefs- Nepal Army, Nepal Police, Armed Police Force, and National Investigation Department • Heads of local levels with provincial capitals (Mayors)
District Level	District CCMC	• Chief District Officer • District Coordination Officer • Other Officials of District Security Committee • Heads of Government Hospitals located at District Headquarters **Advisor Group** • President of District Coordination Committee • District President of Federation of Urban and Rural Municipalities
Local Level	Local CCMC	• Municipality Chairperson • Chief Administrative Officer • Health Coordinator • Representative of Security Body (Department)
	Local Level Coordination Committee	• *Coordinator*: Chairperson of respective local level • *Co-coordinator*: Deputy chairperson of respective local level • *Members*: All ward chairpersons; All executive members; All health facility in-charges; Five community volunteers nominated by executive members; Red cross representative of respective local level • *Member-Secretary*: Health coordinator
Ward Level	Ward Level Coordination Committee	• *Coordinator*: Ward president or nominated local representative by ward president of respective ward • *Members*: Ward representatives; Representatives of health facilities; School Principal; Five community volunteers nominated by ward • *Member-Secretary*: Ward secretary

Despite the formation of HLCC/CCMC, some major decisions were also taken by the cabinet, for instance after the first local transmission was reported on 4 April, the council of ministers decided to restrict the movement, performed mass testing for COVID infection and equipped health workers with personal protective equipment (PPE). In early June, the GoN increased the role of CCMC by disbanding the HLCC. The Deputy Prime Minister led the centre with members from multi sectoral representation as shown in table 2. Further, a Facilitation Committee to support the CCMC's functions was formed under the leadership of the Chief Secretary that dealt with health services and treatment, supply of medicine and equipment, maintain peace and security, and regulate information and technology. Furthermore, CCMC at the subnational level were given the responsibility to manage returnee Nepalese from border areas.

Box 1: Evacuation of Nepalese from abroad

One of the major accomplishments under the COVID-19 response was the evacuation of Nepalese students from Wuhan, China where COVID-19 had hit the hardest during that time. GoN formed a working team under the leadership of Secretary at the Office of Prime Minister and Council of Ministers for the evacuation. On 15 February 2020, the government air lifted 175 Nepalese form Wuhan, China. The evacuees were kept at the quarantine facility for 15 days, following proper health standards. Throat swabs were collected for laboratory testing from the evacuees and all of them tested negative for coronavirus, then on the 16th day they were allowed to return to their families. The working team was later on kept under the CCMC and continued to work for evacuation of Nepalese from other countries as well particularly from gulf countries. The same team were also mandated to handle the quarantine and isolation of COVID-19 cases in the country.

Notably, provincial government had no representation in HLCC or CCMC at federal level, and were mainly responsible to execute the decisions from the committees/centers. Later, Provincial COVID-19 Crisis Management Centre led by its chief minister was formed at the provincial level, and similar centres under the leadership of Mayor were formed at the municipal level. District Level CCMCs were set up in all districts with Chief District Officers heading the COVID-19 response which compromised the roles of provincial and local government. In August, Ministry of Health and Population (MoHP) formed another three-

member high-level committee to prevent and control the virus through coordination with the hospitals at the provincial, district, and local levels. The committee's role was to ensure the arrangement of ICU and ventilators for COVID-19 patients along with coordination for effective case investigation and contact tracing, quarantine management, and manage health workforce. The committee was also responsible to take action for the construction of oxygen plant at COVID-19 Special Hospitals.

The government started to mitigate the ongoing shortage of medicines and medical equipment by utilising the private sector to import supplies. Since public procurement takes a longer time, HLCC on 26 March assigned the private sector to procure equipment in order to reduce delay. The decision invited wide criticism for not following the procurement act 2007 and overseeing the possible corruption in the purchase as discussed in Box 2.

Box2: Procurement Scandal

On 24 March, HLCC and Department of Health Services/MOHP contracted a private firm, OMNI Business Corporate International for the procurement of COVID-19 test kits and equipment. Soon after which it was drawn into controversy as the OMNI group purchased at exorbitantly high prices compared to the market price, raising serious concerns over massive financial irregularities in the deal. For instance, the firm procured per N95 mask for NPR 828.67 ($7.1) and per non-contact thermometer for NPR 7,500 ($64.4), whereas the market price was only NPR 462.50 ($3.9) for the mask and NPR 4000 ($34) for the thermometer. Media also reported that almost all the deals that were awarded to the OMNI firm was without following any competitive bidding process and had courted controversy for not following the public procurement act 2019. There were also concerns over the price and quality of the medical equipment, including testing kits and masks. Following the controversy, the government scrapped NPR 340 million procurement contract with OMNI Group stating the firm was not in a position to deliver the second consignment. At the time, the firm was supposed to bring the second and final shipments of the medical equipment from China. With the cancellation of the contract, OMNI had been forced to forfeit its Rs 50 million security deposit. After the event, the Nepal Army was roped in to procure medical equipment necessary to deal with the Covid-19 pandemic through a government-to-government deal. Later the PCR test kits was procured by Nepal Army but the kits were incompatible in many of PCR machine available in Nepal. In the meantime, the main opposition party and civil society demanded an investigation into alleged irregularities and corruption in the procurement of medical kits and protective gear.

Lockdown, travel restriction and border check

Amidst the rising number of COVID-19 cases in China, South Korea, Japan, Italy, and Iran, HLCC suspended on arrival visa effective from 10 March for foreigners coming from these highly affected areas. For other international travellers, HLCC decided that the travellers should present COVID-19 negative certificate on their arrival. Later, the committee suspended on-

arrival tourist visa for all countries following the announcement of COVID-19 as pandemic on 11 March 2020. Moreover, it announced the plans to completely halt flights to and from the affected countries and cancelled all tourism promotional activities. On 22 March, the restriction applied to all international flights along with closure of border entry points. It also directed the provincial and local authorities to implement two-week mandatory self- and home-quarantines for everyone visiting Nepal. Health checkpoints began to be established at all major entry points from India. Simultaneously, GoN closed academic classes, and gradually closed all public and private offices except those delivering essential services. On 24 March, the HLCC decided to impose a lockdown, based on the provision of the Infectious Disease Act 1964, to combat the possible outbreak of the new coronavirus infection in Nepal. Lockdown restricted the movement of public inside and from outside Nepal, notably during the time only two COVID-19 cases were confirmed in Nepal. The monitoring of the implementation was done by the Ministry of Home Affairs, the Ministry of Culture, Tourism and Civil Aviation and the Ministry of Communications and Information Technology along with Provincial and local governments.

Some national level policies and guidelines described the role of Nepal Army in operation and management of holding centres and quarantine centres with the coordination and collaboration of local levels and CCMC. [18,21,22] Similarly, as per MoHP's guideline on "Brief procedure on management of bodies of COVID-19 deceased", Nepal Army were mobilized in the management of the deceased body from COVID-19. [23] Home Ministry/Nepal Police and the MoFAGA along with provincial and local governments were made accountable for monitoring the activities of local governments and disinfecting/cleaning the public places with high levels of movement of people such as roads, hospitals, public transports etc. The actions also included mobilization of district-based Nepali Army to establish health desk in cooperation with concerned local levels, mobilization of crisis management cells to tackle COVID-19, and Nepal police and Armed Police kept on high alert to prevent and control the spread of COVID-19. More than 12,000 security personnel were oriented for their deployment during emergency with Personal Protective Equipment (PPE). Deployment of security personnel is common in Nepal during emergency response like earthquake, flood as Nepal's constitution provides privilege to the government of Nepal to mobilize security forces including Nepal Army for disaster management works as per the federal law.

Decentralized structure and policy in response to COVID-19 at subnational levels

At the subnational level, CCMC were formed at the provincial, municipality and district level to lead response activities and to manage quarantine and isolation centres. A letter issued by MoFAGA on 3 April, based on the decision of MOHP, Health Emergency and Disaster Management Unit, asked all the local levels to make preparation and management for COVID-19 response including formation of coordination committee at municipal and ward level and also mentioned about its formation structure and terms of references.

Provincial government such as Karnali province decided to limit the travel of foreign nationals coming to the province without the permission of the Chief District Officer (CDO) of the district, mandated 14 days quarantine after travel, and to set up a fund of Rs 500 million to be spent for the prevention and management of COVID-19 under government jurisdiction. Similar actions were undertaken in other parts of the country as well. To ensure the successful implementation of the decisions, three high-level committees on implementation, monitoring and supply were formed, and similar committees were also formed at district, municipal and ward level, according to media reports. Media were critical on the selection of committee members at the HLCC where health experts were excluded, and gender inclusiveness was also not considered. MoFAGA issued a notice to Chief Administrative Officers at all local levels directing them to strictly implement the 'Standard on Operation and Management of Quarantine for COVID-19 Quarantine Facilities' for provision of basic amenities to quarantined persons; modifications or upgrades of the quarantine facilities to be done to meet the standards set by the government. On 25 August, after Kathmandu became the largest COVID-19 infected district in the country, all the local governments inside Kathmandu valley (Kathmandu, Lalitpur and Bhaktapur districts) jointly took decision to shut down their offices until 31 August, with subsequent extensions on shut down in the later days.

Reaching the unreached

Due to nationwide lockdown for about four months, all the economic activities were suspended, mostly affecting daily wage earners and migrant workers as they were unable to meet their daily needs. Hence with the time, the government moved forward to address their problems. In this regard, MoFAGA issued a notice regarding effective prevention and control of COVID-19" on 7 April, 2020 and directed chief administrative officers of all local levels which

also includes city councils/urban municipalities to collect the data of individuals and families who are likely to face threat of famine or unable to fulfil their basic need for the purpose of providing relief packages as per requirement. [22]

Wage earners hit hard due to prolonged lockdown

Ujjwal Satyal

Kathmandu, May 27

Padam Bahadur Thapa, 48, who was spotted at Kaushaltar area of Bhaktapur at around 3:00pm, was riding a cycle cart to reach a house where he was assigned some work. He was promised Rs 200 for the work.

Thapa is facing a hard time these days as his income has been limited to Rs 200 to Rs 400 on an average. This amount is not enough to feed his family two meals. Things were not the same before March 24 (the date from when the nationwide lockdown was imposed). Earlier, he used to earn Rs 1,800 to 2,000 per day.

"These days, the maximum I can make is Rs 200 to Rs 400, that too if I am lucky enough to get work," Thapa told *THT*.

A similar plight is faced by the couple — Rohit and Sarita — who were spotted at Sanothimi area working on an under-construction house. The couple told *THT* they were compelled to work for survival as they could not continue with their business due to the lockdown. The couple said they had recently opened a momo shop at Pepsicola, but a few days later they had to pull down the shutters due to the lockdown.

"We invested all our saving on the shop, now we don't have enough money to feed ourselves," said the couple, adding that they were thus forced to work as construction labourers. "But, since we are not fit for that work, we are underpaid," Sarita said.

Thapa and the couple are among thousands of unaccounted daily wage earners employed in the informal sector, who have been hit hard by the over two months of lockdown imposed in a bid to stem the spread of coronavirus. Thousands of wage earners have been stranded in city areas due to the lockdown. But, neither the local government nor the federal government has any record of these workers.

The local governments, who had started distributing relief to needy people a few weeks after the lockdown, have now stopped distributing such relief.

"We realised that distributing relief was not the long-term solution to the problem, we thus are planning to introduce some programmes for a long-term solution to the problem created by the lockdown," said Aanjana Devi Madhikarmi, deputy mayor of the Madhyapur Thimi Municipality. She said that the municipality was preparing to provide part time jobs to these workers in exchange for food.

Majority of local governments now have started thinking of providing employment to daily wagers. A few days ago, Kathmandu metropolis had introduced a similar programme called 'food for work' for the needy people.

Man Dangol, ward chair, said around 350 families had benefited from the programme that started last Saturday. Dangol said needy people were glad to do the assigned work as they felt that they had earned food for themselves rather than depending on others' mercy for food.

A daily wage earner riding his cycle cart to reach his destination, at Gatthaghar, Kathmandu, on Wednesday.

Photo 2: A screen shot of a news published in The Himalayan Times on 28 May 2020. ©HERD International

To further facilitate local government in relief activities, the federal government issued guidelines regarding, "effective prevention and control of COVID-19" and " adherence to one door system for distribution of relief packages" that asked all local levels to adhere one door system in the distribution of relief packages. It further specified that individuals, institutions, government and non-government organizations willing to distribute relief packages should coordinate and provide relief packages to municipality to avoid duplication in distribution. Besides, it informed that local levels including metropolitan cities were distributing relief packages to laborers, disadvantaged groups and helpless people to support their daily livelihood. [22,24]

On 25 March 2020, MoFAGA published a notice "To make necessary preparations by adopting high vigilance in prevention and control of COVID-19" that directed all the local levels to monitor the situation of individuals living in community accommodation of local level such as old age home, orphanage, hospice, temples, Buddhist monastery, and mosque, collect their

information and coordinate and facilitate for the necessary management for their minimal livelihood. Similarly, it also asked local levels to collect statistics of family members, place of residence, and individuals working as daily wage laborers in informal sectors (such as brick industry, carpet industry, garment industry, etc.) to support for continuation of their livelihood. [21]

Besides, the government also planned to provide basic minimum needs at quarantine and isolation centers as required (special arrangements for PWD, survivor of gender-based violence and human trafficking, special priority for pregnant and lactating women). People were verified based on the national identity card and recommendation letter from local authorities. No particular news were reported from media regarding the coordination with NGOs or private sectors in distributing relief packages. The relief package mainly included food, mask, sanitizer, soap and financial support.

Risk communication

Media urged effective risk communications from government that could play an essential role in controlling an emerging pandemic, avoid spread of misinformation and panic, anxiety and other psychological distress among the public. There was frequent media coverage on COVID-19 related stigma in the form of unwelcome behaviour reported among health workers, patients, and returning migrants. Besides, the stigmatization also resulted into refusal of the treatment, absenteeism of health workers at the quarantine and isolation centres, and such news empathised the victims. Both patients and health care workers suffered from stigmatization. National Information Commission released a statement asking government to disseminate accurate and detailed information of the infected person maintaining the confidentiality. All tiers of government were engaged in risk communication through media and particularly the municipality authorities were mobilizing the health workers. The communication also included preventive and protective messages to avoid mass gatherings, public ceremonies, and celebration, handshake and hug, to maintain social distancing, use of mask, and to sanitize hands.

3.3.2 Preparing health care system

Infrastructure/Service development

i. Designation of Covid-19 hospitals

In order to respond double burden of the disease, MoHP developed "Health Sector Emergency Response Plan" on 9 May 2020 that mentioned about designating hospitals for COVID-19 treatment based on the capacity and to further strengthen HR and logistics to manage cases effectively. [25] In this regard, MoHP issued "Interim guideline on delivery of COVID and other health care services" that directed 126 hospitals (hub, provincial, medical colleges and private hospitals) to run COVID-19 clinics and 16 hospitals to run as Level 1 COVID-19 hospitals, 13 hospitals to run as Level 2 COVID-19 hospitals and 4 hospitals to run as Level 3 COVID-19 hospitals. These hospitals were asked to provide COVID-19 services as well as other health services such as services for emergency, acute and chronic conditions, essential health services, and ambulance services. Likewise, other governmental and non-governmental health facilities were made responsible for providing regular health services by taking precautionary measures. [26] Despite the designation of COVID-19 hospitals, which however focused primarily in urban areas, lack of health facilities able to treat COVID-19 seemed to be a major challenge in Nepal.

After WHO announced COVID-19 as public health emergency of global concern in January, the news media in Nepal focused more on COVID-19 including country readiness to respond if outbreak ever happens. During this month, media highlighted the areas to be improved to respond and manage the possible cases of COVID-19. One of the areas highlighted was on the need to restructure the health system in a way to foster better communication between federal, provincial and local governments. In news, articles, and interviews, health experts suggested to plan for the infrastructure and resources required to tackle the possible outbreak. In late January, Shukraraj Tropical and Infectious Disease Hospital (STIDH), a public and the only infectious disease hospital of Nepal was designated to treat COVID-19 patients for the first time. After confirmation of first COVID-19 case in the capital, STIDH set up a ward with 30 beds to treat suspected cases of COVID-19. In February, provincial level also started to report their preparedness. Gandaki province set up an emergency center at the provincial level and allocated separate rooms at the district level hospitals for treating and managing COVID-19 patients. Similarly, Bagmati province set up separate wards to treat COVID-19 cases, and isolation wards established at the selected district. HLCC announced the plan to set up

laboratories with Biosafety Level- 2 at the federal level and COVID-19 specialised hospital. However, HLCC focus was more on urban areas to prepare COVID-19 special hospital. For example, armed police force prepared a COVID-19 hospital under the leadership of MoHP. Later, some provinces were reported to have established specialized hospitals or units like in Dharan municipality of Province 1. Amidst the lack of resources, Provincial governments pledged federal government to support preparing COVID-19 hospital and installing PCR machines to strengthen health system. The HLCC announced the strengthening of health infrastructure for instance, 250 ICU beds in every provincial capital and 50-bed infectious disease hospital in all provincial capitals across the country. News also mentioned that as the plans are multi-sectorial, it would take minimum 2 years to implement the plans. However, news did not identify which multi-sectoral actors would be involved in implementation of the plans and how they would be coordinated to meet the objectives. Furthermore, different activities at the sub-national level were reported to respond to COVID-19 mainly establishing temporary COVID-19 hospitals and building isolation wards.

ii. Management of Covid-19 logistics

Both public and private hospitals that were frequently reported to have been under-prepared in terms of infrastructure, medical equipment, diagnostic facility, personal protective equipment and trained human resources to prevent and contain COVID-19 outbreak. For instance, National Public Health Laboratory (NPHL), which was the only laboratory with diagnostic facility to detect COVID-19 tests in Nepal at the time, had limited test kits in its stock, not enough if there was a sudden rise in the number of infections.

One of the directives of MoFAGA's "Regarding implementation of decision of Government of Nepal", reported government's decision to establish a separate fund for prevention, control and treatment of COVID-19 infected people, and management of medicine, equipment and infrastructure establishment. [27]

In April, with a spiking number of cases, the health system appeared unable to manage the response. Media reported news on lack of essential medical equipment such as oxygen cylinders and ventilators along with inadequate quarantines and isolation centres. Importantly, safety of health workers was compromised due to shortage of PPE. Moreover, inadequate infrastructure in terms of limited number of beds, medical equipment, PPE, diagnostic facility,

and space for quarantine and isolation, were frequently reported across the hilly and mountain areas of Sudurpashchim and Karnali Province.

In May, similar issues were covered in the media. Provincial government announced a tender for purchasing PCR testing machines, ventilators and constructing ICUs. Municipalities, as are authorised in the federal context, allocated budgets for procuring PCR machines to test COVID-19 cases and initiated quarantine areas in their respective communities. Also, the expansion of isolation centers in the different parts of county including in Sudurpashchim also appeared in the media.

Quality of service delivery was compromised due to underprepared health system. Some metropolitans like Birgunj from Province 2 had miserable experience where hospital was fully occupied with COVID-19 patients and patients were also treated at local schools. Poor service management at the health facilities and quarantine centers by the government were frequently reported in media across different parts of the country. GoN, CCMC and MoHP were criticised for being inefficient to control the rising cases of COVID that stressed the health system to deliver effective response. One of the media reported that due to lack of beds, the number of COVID patients were almost double in the home than in hospital.

Hospital authorities had difficulty to manage non-COVID-19 patients, after the hospital was designated for COVID-19 management. Some hospitals had encouraging news coverage on effective coordination with other hospital to resolve this issue. Implementation challenges on COVID-19 response and management, particularly the decision of provincial government to build COVID-19 special hospital in the province, was not initiated into action.

iii. Engagement with plurality of health care providers

With the continuous rise in COVID-19 cases, the Government of Nepal developed several policies that mentioned about the direct or indirect engagement of private sectors in COVID-19 preparedness and response. The response plan clearly highlighted about the involvement of private sector in COVID-19 response through a partnership model that needed to be guided by a Memorandum of Understanding (MoU) between private hospitals and MoHP and/or provincial ministries. The partnership was aimed at delivering COVID-19 health services based on approved cost reimbursement modality where private health facilities were agreed to get reimbursed by MoHP for delivering COVID-19 treatment services free of cost to people. [25] The

MoHP stepped forward to link across the plurality of service providers and developed "Directions on grants provision to hospital providing for COVID-19 treatment" (n.d.), which stated about the provision of free treatment of COVID-19 related services from private, non-government, cooperative and community hospitals, although priority was given to treatment delivery from government hospitals. Regarding grant provision for the treatment, only a number of hospitals listed by MoHP inside Kathmandu valley and by Ministry of Social Development (MoSD) of concerned provinces (outside Kathmandu valley) with consideration of resources and capacities could receive grants for delivering COVID-19 treatment services. [28] Nevertheless, the burden of COVID-19 outbreak was intensifying and the government of Nepal was unable to handle the financial pressure due to which directions on grants provision was amended on 29 June 2020, which prioritized the concept of home isolation or community isolation center and depending on the severity of cases, only referring to hospitals (public) based isolation for treatment. And the grants will be provided to only public hospitals, isolation centers and concerned local level for clinical monitoring of patients in home isolation. [29]

Similarly, the initial direction mentioned the cost per patient for treating suspected and confirmed COVID-19 patients in public, private, non-government, cooperative and community hospitals shall be as determined by the GoN for which MoHP may consult the concerned experts while determining the cost amount. [28] However, this clause was amended and the government decided to provide two hundred rupees for health workers engaged in clinical monitoring of home isolation, two thousand rupees for isolation center, thirty-five hundred rupees for managing mild cases in public hospital, seven thousand rupees for managing moderate cases in public hospital and fifteen thousand rupees for managing severe and critical cases in public hospital. [29]

Despite the availability of skilled HR and resources, private laboratories were not allowed to conduct COVID-19 testing until May 2020. Most of the private laboratories also appealed the government for allowing them to conduct COVID-19 testing. With the surge in COVID-19 cases and limited public laboratory testing facilities, huge number of samples were on hold in the laboratories. Consequently, MoHP authorized private and community hospitals to conduct COVID-19 Rapid Diagnostic Tests (RDT) on 15 May, 2020 [30] and private laboratories to conduct Polymerase Chain Reaction (PCR) test on 22 June, 2020, with a condition that these institutions must adhere to the guidelines developed by MoHP. [31]

Human Resource

I. Human Resource Mobilization

As the cases started to surge globally, HLCC directed the province to coordinate with local governments across the country for setting-up health desks at their respective airports and border checkpoints during February. They deployed the health workers at the health desks to conduct health check-up of tourists, public, migrants, and collect the samples of suspected people for the testing of COVID-19. During this early phase, health workers lacked PPE and adequate knowledge on COVID-19. This demotivated the health workers and compelled to work in a fearful environment of getting the infection. One of the teaching hospitals in Kathmandu reported,

> *"We have human resource, but we don't have PPE. When health workers can't protect themselves how are they going to treat patients?" (27 Feb 2020)*

In April as the cases started to rise, MoHP focused to expand the case investigation, and mobilized health teams to conduct contact tracing and COVID-19 testing at the quarantine centres alongside mobilizing medical team in some of the districts. HLCC/CCMC coordinated with provincial and local authorities to mobilize the health workers including the laboratory technician.

In order to effectively mobilize human resources, a response plan was developed that highlighted the mapping and listing of health workers throughout the country and organizing training and capacity strengthening programs for health workers working for COVID-19 and then, preparing their roster. [25] Similarly, few documents mentioned health post, primary health care center, provincial hospitals and unified hospital shall manage and provide services by mobilizing currently working HRH. [26,32] Further, the interim guideline stated that trained specialist doctors, nurses and paramedics could be managed in COVID-19 hospitals through hub hospital whereas MoHP can manage additional HR in coordination with provincial government. Also, student doctors, nurses and other health workers who were supported under scholarship of the Government of Nepal could be mobilized in COVID-19 hospitals as needed.. If additional HR is necessary, they could be mobilized through contract to make the process quicker with the provision of services and facilities as per guideline such as risk allowance. [26] Despite such guidelines for mobilizing and managing human resource, the lack

of skilled human resources in the laboratory, health desks, quarantine centres and hospitals from federal to local levels during COVID-19 was the most reported problem throughout the period of March to August. Notably, the mobilization of HR particularly at the border area witnessed the challenge of untrained and inadequate human resource.

Tertiary level hospitals in Kathmandu valley like Patan Hospital, STIDH and Bir Hospital were putting their efforts to strengthen COVID-19 management services with recruitment and capacity building of health workers in conducting the COVID-19 tests, but the efforts were not adequate as the cases were rising. Gradually, these hospitals along with other hospitals from different provinces were overloaded with COVID-19 case management due to the limited number of physicians and nurses in ICU. To manage the situation, the hospitals and other health institutions even issued a directive to health workers and doctors to work all day without any leave except for emergencies. The situation further exacerbated when COVID-19 infection started to report from health care workers.

Though MoHP's guideline on "management of health workers directly involved in COVID-19 treatment" published on 15 May, 2020 mentioned that doctors, nurses, health workers and other HR involved directly in COVID-19 treatment should not be involved in the treatment of other diseases, [33] some hospitals had to allow the COVID-19-infected health workers to continue to provide care after only 7 days in isolation, for the treatment of the COVID/non-COVID patients to manage shortage of the HR. Provincial health Directorate, District Health Offices and Municipal authorities deployed health worker for the collection of swabs and lab technicians for the testing in August. The efforts did not meet the requirement, and shortage of human resource along with equipment slowed the frequency of tests. Some health facilities increased the number of work shifts due to limited number of health personnel. The influx of migrant worker from India with increasing number of infected cases burdened the districts adjoining India border, particularly in Sudurpashchim province. The health workforce and necessary equipment lacked in the public hospitals and health institutions of the province. The challenge in the health system was mostly due to existing weakness in the readiness and availability of health services, including human resource for health management, which was aggravated by COVID-19 situation.

As per the response plan which mentioned the formation of emergency medical deployment team (EMDT) in the hub hospitals and medical colleges and their mobilization as per the need of the provincial and other hospitals, [25] MoHP issued "COVID-19 emergency medical deployment teams (EMDT) mobilization guidelines" on 28 May, 2020 which outlined number of HR estimating the management of 50 suspected or confirmed COVID-19 in-patients with mild symptoms. However, the guideline also mentioned that additional team can be deployed or patients can be transferred to nearby COVID-19 designated hospital if the patients show moderate or severe symptoms. The guideline further stated about the preparation of two COVID-19 EMDT at each hub or hub and satellite hospitals. It also mentioned EMDT shall be composed of one physician; one doctor; six nurses or health assistants; and three attendants. [34] Although, MoHP from federal level deployed the medical teams in the province to assist in the treatment of people suffering from COVID-19 but the efforts were below par to meet the requirement.

The Jajarkot district lacks adequate preparation to battle the pandemic due to shortage of human resource and infrastructure. The 50-bedded district hospital has sanctioned position for seven doctors and 65 health workers, however, only 18 health workers are working now.

(5 April 2020)

II. Capacity Strengthening

On 28 January, with the nation entering the first stage of COVID-19 infection, media reported the plan of the National Public Health Laboratory to provide trainings to the doctors and health practitioners of public and private hospitals. On 10 February, 60 health workers including medical officers, staff nurses, health assistants, and other paramedics were trained on quarantine management at the federal level. In early February, for the evacuation of Nepalese students from China, a team of 50 officials from Nepali Army, Armed Police Force, Nepal Police, Health professionals and aviation personnel were formed. They were trained on using the PPE and taking other precautionary measures along with the management of the students. In the third week of March, Nepali Army did a rehearsal to train their medical doctors across the country at the army headquarter in Kathmandu. The rehearsal focused on management of quarantine centre and isolation ward. Nepal Disaster Risk Reduction Management Authority (NDRRMA) also provided the orientation regarding safety measures to more than 12,000

police personnel. The media reported the news regarding the engagement of the security personnel (Nepali Army, Nepal Police and Armed Police Force) in response to the management of COVID-19 pandemic throughout the month of February to March.

Majority of documents mentioned about capacity strengthening of HR in coordination with MoHP, EDCD, National Training Center and in collaboration with WHO, UN and other bilateral agencies for their effective mobilization in COVID-19 context (for example, see the name of policy in serial number 2, 5, 8, 11- 15, 18 - 20, 34, 36, 39, 40, and 60 in annex 3). Most of the documents stated that all HR should be oriented about COVID-19 and trained on the appropriate methods for hand-washing and using alcohol based hand sanitizer and donning and doffing of PPE including leak test for N-95 masks. In addition, MoHP developed "Environmental cleaning and disinfection" on 17 June 2020 and "Standard Operating Procedure (SOP) of cleaning and decontamination of the ambulance used in COVID-19" with unpublished date which mentioned cleaning team involved in cleaning and decontamination shall be trained on environment cleaning and disinfection and donning and doffing techniques for PPE including hand hygiene to prevent exposure during the different steps. [35,36]

One of the HR mobilization guidelines directed provincial government to manage training and orientation for CICT team virtually through the coordination with MoHP, EDCD and National Training Center. Moreover, CICT teams shall strictly adhere to SOP for CICT while carrying out their responsibilities. [37] Similarly, another document stated that training shall be given to EMDT covering various topics such as national COVID-19 strategy and management planning, national COVID-19 disaster management policy, management of respiratory disease and COVID-19, infection control, and so on. [34] Regarding capacity strengthening of laboratory personnel, some guidelines and SOPs have stated that laboratory personnel shall undergo specific training in order to carry out COVID-19 testing, sample collection, packaging, shipping, and reception. [12,38–40]

III. Motivation to HR

The response plan mentioned about the development of a procedure guide and benefit package to ensure life and health insurance of the health workers and support staff mobilized in COVID-19 response. [25] In this regard, few directives such as " implementation of decision of

Government of Nepal" published by MoFAGA on 1 April 2020 and "Directions on management of risk allowance to human resources engaged in treatment of COVID-19 infection-2077" issued by MoHP (n.d.) stated about the establishment of provision of risk allowance (as shown in *Figure 9*) for HR engaged in health desk, quarantine, treatment, lab testing, and contact tracing for prevention, control and treatment of COVID-19 infection, [27,41] however, the media emphasized several complains of health workers not receiving or delaying in receiving not only risk allowance but also their salary due to which some health workers were demotivated. Further, a risk allowance directive also directed private, non-government, cooperative and community hospital to provide risk allowance to HR involved directly in COVID-19 treatment as mentioned in *Figure 10*. [41]

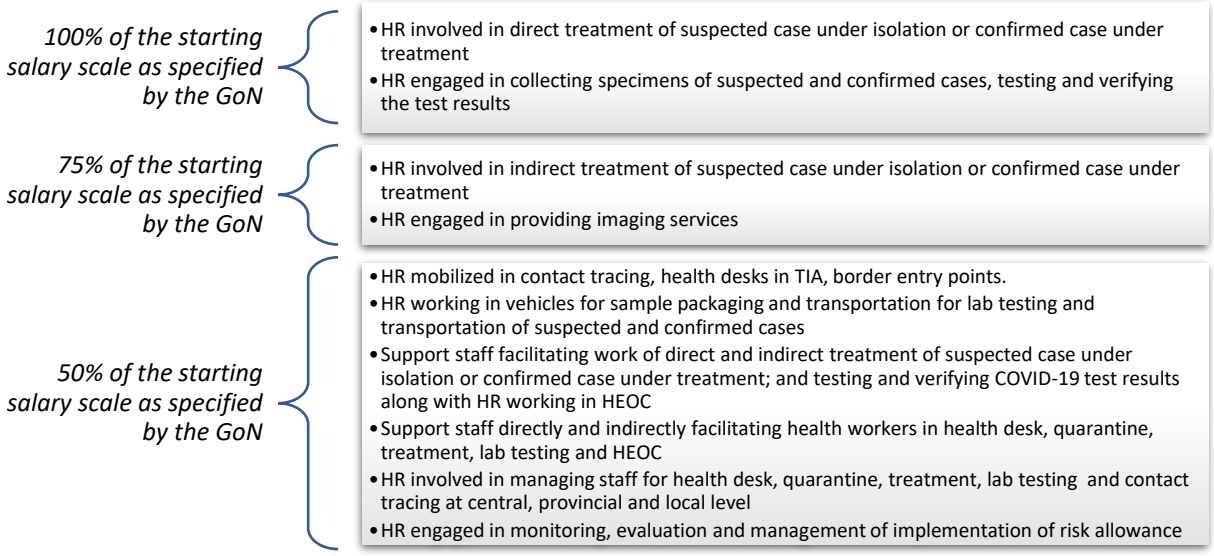


Figure 10: Description of risk allowance for HR engaged in COVID-19 response

Similarly, Ministry of Finance announced the treatment upto NPR one million for the COVID-19 infected HR. [27] An EMDT mobilization guideline mentioned MoHP should provide life insurance, travel allowance/daily allowance according to the government policy, and COVID-19 hazard allowances if applicable. [34]

Besides risk allowance and insurance, a document of GoN directed MoHP to arrange and manage PPE for ensuring health security for HR involved in prevention, control and treatment of COVID-19 before deploying them to workplace. [27] However, lack of PPE in health facilities was explicitly evident in news throughout the study period and health workers were compelled to work without PPE risking their lives.

Similarly, a staff mobilization guideline mentioned the hospital authority to provide holidays for 1 week for health workers and other HR involved directly in COVID-19 treatment after completion of quarantine with their negative COVID-19 report. [33] However, the revised guideline stated that one-week holiday should be given to those who worked for 12 hours a day for 7 days continuously without cutting off other holidays. [42] Also, few documents stated COVID-19 hospitals should manage quarantine facility for them including quality and healthy food and water, [33,43] however, the amended guideline stated that the hospital can manage such services for only those who are not able to live in their own accommodation. [42] Furthermore, the staff mobilization guideline mentioned that concerned authority should provide them salary for their work including quarantine duration and 7 days' holiday. It stated that priority should be given to those staffs in COVID-19 testing and treatment. [33] Besides, few guidelines also mentioned that hospital is responsible for providing counseling services to health workers involved directly in COVID-19 treatment and their family. [33,42] Besides, government decided to bear the entire insurance charge of health workers and Female Community Health Volunteers (FCHV).

In April, Nepal Police Department announced to divert three to seven days salaries of all ranks personnel towards the Coronavirus Infection Prevention, Control and Treatment Fund. The security personnel were deployed in the field around the clock to enforce the lockdown and without adequate protective equipment. Media described the Nepal Police's decision as unjust for those who are on the front lines. This had affected the morale of the security personnel as described by the officials of Nepal Police

Media also reported some incidences that demotivated health workers such as house-owners and neighbours obstructing the health workers from returning home due to fear of COVID-19 transmission from them. Not only the health workers, but their family members were also forced to live under social stigma according to the media. After such incidents, media reflected the quick response of government requesting the public for not discouraging the health workers who have been risking their lives during COVID-19 pandemic. Moreover, in some places health workers initially did not present to health facilities because of the fear of COVID-19 infection. One of the hospitals from metropolitan city, Birgunj, reported that the health care workers did not join the hospital following the COVID-19 crisis. The metropolitan had to take strong measure against them as the number of COVID-19 cases were rising tremendously in

July and August. Besides, unavailability of protective equipment and safety measures the hospitals and health institutions raised fear amongst health care worker being infected with COVID-19. On the other hand, the government was delaying providing risk allowance. These factors had affected their enthusiasm to work. Yet, there were also examples of health workers who dedicatedly worked amidst the risk of getting infected and COVID-19 stigma. There was also encouraging news reported about GoN and some non-government organizations like Nature Service Foundation Nepal, Barbara Foundation, etc. rewarding front line workers for their work in management of COVID-19 at the provincial levels.

Health Financing

Since the declaration of COVID-19 as pandemic, government focused to strengthen health system and make it more responsive to manage COVID-19 cases across the country, and at all three tiers of government. In May 2020, government announced budget for the fiscal year 2020/21 that mainly focused on COVID-19 crisis management. The fiscal budget allocated Rs 12.46 billion ($100 million) for health infrastructure development and Rs 14.27 billion ($120 million) to build new hospitals. The Ministry of Health & Population budget increased to nearly Rs 91 billion ($776.4 million) from Rs 68.78 billion (US$610.8 million) in the previous fiscal year.

The council of minister decided to establish "Corona Infection Prevention, Control and Treatment Fund" for managing fund for procurement of drugs and equipment, establishing health infrastructures, and managing COVID-19 infected individuals on 1 April 2020 which was communicated to relevant ministries, provincial and local government by MoFAGA's for its implementation. Prime Minister and all the members of Council of Ministers agreed to donate their one-month salary to this COVID-19 fund. Furthermore, the Government of Nepal asked civil servants, public representatives, nationalist, businessman, industrialist, political party, organizations, volunteers including common individuals that are willing to help to donate to the fund. The prime minister and ministers also contributed a month's salary while a majority of lawmakers pledged 15 days' salary to the fund. While receiving fund from foreign government(s), organizations and individuals, an approval from Ministry of Finance was made mandatory. By the middle of April, nearly Rs 2 billion was collected in the fund. The major contributors were from government agencies followed by few private companies including bank and those working in telecommunication, domestic airlines, tobacco, tourism. and fast moving consumer goods manufacturing.. For instance, from May to August 2020, media

reported that several organizations were donating funds to the government's COVID-19 fund. For example, the fund deposited by Standard Chartered Bank, Nepal Bangladesh Bank, Swabalamban Laghubitta Bittiya Sanstha (micro finance institution), NIC Asia Bank, Citizen Bank International, Siddhartha Bank, Sunrise Bank, Nabil bank and National Cooperative Federation accounted around 150 million Nepali rupees. (calculated from the news published in Kantipur national daily on different dates). Beside contributing to COVID fund at federal level, private sector also directly contributed to the sub national government by coordinating with provincial governments. For instance, Surya Nepal, one of the leading private sector enterprises in Nepal provided 70 million for seven provincial government- 10 million rupees for each province whereas Global IME bank directly supported 1 million rupees to province 1. Later on, provincial government also established a fund. Provincial government allocated funds to support local government for strengthening and expanding health services to treat COVID-19 cases where the allocation was higher for the urban municipalities, particularly the metropolitan cities.

By 22 April, the government spent $34 million to contain the spread of COVID-19 infection. Most of the budget was spent to procure medical equipment and drugs, test kits and on other security measures. Of this, Rs 2.34 billion ($20 million) was allocated to the Ministry of Defence and Rs 1.15 billion ($10 million) to the Ministry of Health and Population. Government also came up with a plan to provide half a million rupees health insurance for those health workers who were involved in prevention and treatment of COVID-19 infection. Nepal Medical Association demanded compulsory health insurance and PPE for all doctors and health workers who work at the front line and special relief package for health sector considering the rising cases of COVID-19 and associated risk of being infected while providing treatment to COVID-19 patients. Later, the CCMC decided to provide insurance worth Rs 1 million ($8532) for each health worker and provided 25-75% allowance to them as well. However, frequent reports across the country suggested that many front-line workers including health workers did not receive such incentive package. A few months later in June, GoN called for joint efforts to fight COVID-19 crisis and extended its support to both public and private sector who don't have adequate resources. In late June, the council of ministers approved to provide a grant to hospitals for the treatment of COVID-19 patients. The council also decided that treatment of suspected or confirmed COVID-19 patient will be provided free of cost.

"Council of Ministers decided to provide 100 percent risk allowance to medical personnel, health workers and security forces engaged in treatment and quarantine management of COVID-19 in the hospitals, but government has not paid the allowance for four months, said Nepal Police SSP."

(18 Aug 2020)

3.3.3 Prevention and management of COVID-19 transmission

Case Investigation and Contact tracing

Contact tracing is a strategy used by the government to identify all people that a COVID-19 patient has come in contact with in the last two weeks. Following the detection of the first case in late January, the government trained the health workers on contact tracing, isolation, quarantine, and screening by the second week of February. However, news media focused attention on contact tracing only after the second COVID-19 case was confirmed on 25 March i.e., the day after the announcement of nationwide lockdown. By the end of March, five confirmed cases of COVID-19 were isolated in designated hospitals of Kathmandu. Epidemiology and Disease Control Division (EDCD) under MoHP-mobilized trained personnel to conduct extensive contact tracing based on their flight details and movement history to identify individuals with a potential infection.

Regarding case investigation and contact tracing (CICT), the response plan mentioned about the formation and mobilization of CICT teams comprising of public health professional, health worker and laboratory technician/assistant at local level for screening and testing. It further stated about the formation of total 1075 CICT teams. [25] Later, MoHP approved "CICT Team Mobilization Guideline" on 10 June, 2020 and directed every local levels to form at least one CICT team at their level and mobilize HR from government service as far as possible and if not, mobilize HR on contractual basis. It also mentioned one CICT team in each rural municipality, two CICT teams in each urban municipality, three CICT teams in each sub metropolitan city and five CICT teams in metropolitan city can be formed and mobilized as per the situation of infection. [37] As per the guideline, CICT teams are formed at every local level responsible for contact tracing of close and casual contact and must fill necessary contact tracing forms developed by the EDCD. The CICT team is composed of paramedics/nurse, laboratory

personnel, representatives from development organization, and is led by public health professional. They worked in close coordination with local level Rapid Response Teams in identifying and contacting people and do an essential follow up in 7 days, and report. By the end of August, 650 CICT teams were formed well below the target of 1,075. Moreover, in rural areas due to limited human resources, contact tracing team comprised of non-health persons such as trained community-level health workers, teachers, and local club members. The team were provided logistic supply and financial support. When the nation experienced overwhelming influx of returning migrants from India, and community transmission of COVID-19, the media reported that case investigation and contact tracing more challenging with the spike of COVID-19 cases during the period of June-August. Contact tracing in urban areas was extensively challenging as tracing teams were not able to perform digital contact tracing, and people provided wrong names and telephone numbers due to fear of stigma. This made the job of contact tracing difficult. Information about number of identified contact was not fully reported at the Ministerial level. There is no additional institutional mechanism for contact tracing. The CICTs could not work effectively for contact tracing activity as health system was already overwhelmed. The media also reported that although the local government made efforts for contact tracing due to lack of trained professional, contact tracing was not effective.

"If we are to test everyone entering through the entry point, it's obvious that the existing infrastructure and human resource will be inadequate, so we've asked the Armed Police Force to help and coordinate if required, said Chief of Health Department of Nepalgunj Sub-metropolitan City."(3 May 2020)

Besides, the stigma around COVID-19 further exacerbated the challenge in contact tracing where people misinformed the health authorities as reported in media. Later the government revised the guidelines to address the issue on lack of trust between the public and health authorities through effective risk communication to the general public including the importance of contact tracing. Media reports from both urban and local municipalities reported that the local authorities and community people played a supportive role in identifying individuals who were exposed to confirmed COVID-19 case.

"Authorities from Epidemiology and Disease Control Division and Kathmandu metropolitan city expressed their concern that infected persons were reluctant to provide detail information

of persons they have come in contact or were giving wrong names and telephone numbers due to fear of stigma, which had made the job of contact tracing difficult."

(31Aug 2020)

Quarantine of exposed individuals to COVID-19 cases

Quarantine as one of key measures to contain COVID-19, commenced in Nepal with joint efforts from multi sectoral authorities involving Ministry of Home Affairs, Ministry of Culture Tourism and Civil Aviation, Ministry of Health and Population, Ministry of Foreign Affairs and Ministry of Defence. The effort was part of an evacuation plan for the Nepalese students from China. The major responsibility to identify the quarantine center for the evacuees was given to Ministry of health and population. The first quarantine center was established for the evacuees at Nepal Electricity Authority Training Center and Drinking Water and Sanitation Division Training Center, Bhaktapur following the WHO guideline and the International Health Guidelines-2005. After the declaration of COVID-19 as pandemic, the government of Nepal made 14-days self-quarantine mandatory for all foreigners and Nepalese entering the country in an effort to curb the possible outbreak of coronavirus. In addition, people identified as contacts of suspected, and exposed to international travellers were requested to self-isolate them in home quarantine for 14 days following the guidelines on home-quarantine which includes one person per room, separate bathroom, frequent hand washing, measuring body temperature twice a day, etc. However, challenges were associated with its implementation where the government could not verify whether foreigners were adhering to the mandatory self-quarantine. One of the media reported a survey conducted in selected hotels of Thamel, tourist area of Kathmandu and found foreigners avoiding rules like submitting health certificates, performing COVID-19 test and staying in quarantine. Some of the foreign nationals were reported to have travelled to other provinces and tourist hubs such as Pokhara breaching government directives. The situation got worse after March when the Nepal's poor health system could not manage quarantine for Nepalese migrant returning from foreign countries particularly from India entered Nepal in large number.

Ministry of Home Affairs (MOHA) issued federal level directives of mandatory quarantine for 14 days to the people entering Nepal before going to their destination. Provincial and

municipal level authorities across the country reported their efforts to translate the directives at the implementation level. MOHA coordinated with across sectors including education, hotel and tourism industry, health, drinking water in both public and private sectors to establish quarantine centers. Schools, college, industrial buildings, hotels, hostels and other physical infrastructure (parks, government compounds) were the primary areas where quarantine centers were established. The provincial level and local government also took initiatives to quarantine those who were traveling across the districts during and after the lockdown.

In the initial phase of establishing quarantine centers, media mainly reported from urban areas, that is the city areas and towns, which are the major hubs to connect the travellers to other parts of the country. News mainly centered on the Province 1, 2, Lumbini and Sudurpashchim, through which many Nepalese migrant workers entered via Nepal-India border and were placed in border site quarantine centers before going home. There have been several reports of people secretly crossing borders to avoid safety measures and breaching the government protocol of 14-days quarantine. In addition, the overwhelming number of people entering the country made it difficult to manage the quarantine center particularly in urban areas. Hence, the local government were actively engaged in tracing those people to place them in quarantine centers. The quarantine centers were poorly managed both in urban and rural areas. There were several reports on violation of immigration rules, quarantine center management, and people fleeing from quarantine center. This was reported by all media from April to June that most of the quarantine centers lacked basic amenities, skilled human resources like doctors, nurses and paramedics, and necessary medical equipment such as oxygen cylinders. Furthermore, there were insufficient safety gears for health workers in some of the quarantine centers. Besides, the centers frequently reported to have lacked appropriate food provision, hygiene maintenance, gender friendly toilets, and safety measures (sanitizer, masks etc). People placed in quarantine centers of both the urban and the rural area reported that they were treated inhumanely and disrespectful manner. Especially, the quarantine centers in school building and compounds were reported to lack beds and hygiene. With several reports of such irregularity in quarantine management, the National Human Rights Commission (NHRC) had warned the authorities against restricting citizens' fundamental rights in quarantine centers. Citing its monitoring report, NHRC stated that quarantined persons did not have access to adequate nutritious food, drinking water, toilets, proper shelter, and health

care facilities, contrary to the standard set by the WHO. Further, NHRC had also expressed concern about broken down quarantine facilities. On 4 April, the day Nepal entered the second stage of COVID-19 infection, Ministry of Federal Affairs and General Administration (MoFAGA) issued a circular to chief administrative officers of all local levels, directing them to strictly implement the 'Standard on Operation and Management of Quarantine for COVID-19 Quarantine Facilities' for providing basic amenities to quarantined people. However, municipal authorities expressed their concerns about the limited resource (infrastructure) to implement the guideline. On 30 May, the federal government decided to start evacuating vulnerable Nepalese including migrant workers who had been stranded in countries other than India. Returnee Nepalese were given two quarantine options — hotel quarantine and public quarantine. Those who wanted to stay in hotels were required to book their rooms in Kathmandu in advance and bear all charges on their own, while the government would only bear the quarantine cost of all those preferring to stay in public quarantine. The federal government provided Rs 175 per person per day for 14 days of quarantine to the local levels. According to MOHP, 90,730 people were staying in quarantine centres across the country till 23 June.

On 26 March, 2020, MoFAGA developed "Guidelines for operation and management of quarantine" for the smooth operation and management of quarantine as the number of individuals in quarantine was swelling. Moreover, it further stated that separate quarantine along with necessary food arrangement should be managed prioritizing pregnant women, children up to 10 years, elderly people and people with disability. [44]

Challenges associated with implementation of quarantine

Adhering to the Standard on Operation and Management of Quarantine for COVID-19 Quarantine Facilities has been a major issue in all provincial and local government. The Supreme Court had issued an interim order, asking the government not to implement a provision of National Testing Guidelines for COVID-19 that allows people to leave quarantines after 14 days without undergoing PCR test if they are asymptomatic. The order aligns with the WHO standard which states anyone who has spent 14 days in quarantine should be tested for coronavirus before sent to home, but that was not practiced in most of the quarantine centers. However, the local governments were experiencing problem to implement the order from Supreme Court as the delay in receiving test result would stop quarantined people to go home

and there would be no space in quarantine centers with increasing number of returnees from abroad and COVID-19 contacted individuals. Hundreds of people were reported avoiding 14 days' quarantine provision and roaming around villages in several provinces and local level. Besides, the local government feared that the quarantine center itself would become the source of infection due to overcrowding. Despite attempts of the government of Nepal, lack of coordination at local level caused difficulty to keep people in quarantine center as there was interference of political parties and Ward officials at several provincial and local level.

".. Schools and empty buildings are all occupied with quarantine as the returnees from India is in large number. More than 36,500 people had been placed in quarantine. The local level could not meet the quarantine criteria as there were not enough schools and buildings. The difficulty of managing quarantine has also increased the risk of corona infection,"

Province Health Director, (1 May 2020)

Health consequences like malaria as a result of poor management of the quarantine centres were reported from quarantine centres of Sudurpashchim Province. Notably, there were few reports on suicides in quarantine centers. Media highlighted the expert opinion that people in quarantine center could develop mental health problems. There had been several reports of sexual abuse in quarantine centers, and to address Pokhara Metropolitan City set up a separate quarantine facility for women. Although "Guidelines for operation and management of quarantine" mentioned criteria such 24 hour security and separate premises for vulnerable people, these criteria were not met and quarantines poorly managed. [44]

Several public, and private organization/individuals came forward for the establishment and management of quarantine centers across the country. Ministry of Health and Population acted as the lead to develop, implement, and monitor Standard on Operation and Management of Quarantine for COVID-19 Quarantine Facilities. While, Supreme Court, Ministry of Home Affairs, Ministry of Federal Affairs had issued policy, declaration, and circulars respectively for the effective management of COVID-19. In addition, on 23 March, a taskforce meeting led by Minister of Culture, Tourism and Civil Aviation had mobilized the concerned agencies jointly to build the quarantine facility which can be turned into a temporar333y hospital, if needed. As per the decision, each province and metropolitan city had to build quarantine facilities for at least 2,000 individuals, each sub-metropolitan city to build for 1,000

individuals, and municipalities and rural municipalities to build for 500 individuals. While Department of Tourism Board had coordinated with Hotel Associations, National Sports Council, private school organizations to identify hotels, hostels, stadium, school buildings to accommodate at least 2000 individuals at a given location respectively in major cities of Nepal. In some urban areas, community had responded positively where many house owners turned their empty houses to quarantine center and urged domestic travellers and foreigners to use them. Few of these sites were reported to accommodate local travellers. At local level, youth clubs were active in supporting government to establish quarantine center with the support of local people.

Isolation of COVID-19 cases

The first isolation ward for COVID-19 was established at STIDH with six beds. The first suspected case admitted in isolation ward of Teku hospital was a returnee form China where he was treated. During February, all the print media reported on the preparation of the government to evacuate the Nepalese students from China. For this, MOHP had directed Sukraraj Tropical and Infectious Disease Hospital, Teku to establish isolation wards for the evacuees who would show the symptoms of COVID-19 during their arrival. Additionally, 200 beds were prepared for isolation purpose in five health institutions including Bhaktapur Hospital, Virendra Sainik Hospital, Patan Hospital, Civil Hospital and Tribhuvan University Teaching Hospital in Kathmandu valley. However, none of the evacuees showed any symptoms of COVID-19. Hospital Development and Medical Services Division under MOHP instructed the hospitals to keep ICU beds ready with isolation wards and ventilators. The Division also directed provincial government to establish at least two isolation beds in each government hospital under the province, while the state government had mentioned the primary health centers under the local government and the hospitals under the federal government to set up isolation wards. Further, The Ministry of Social Development also directed the private sector hospitals to provide isolation beds.

During the period of March- June 2020, there were several reports on the initiatives from provincial and local government to establish isolation centers in district hospitals, public hospitals, and primary health care centers. Some of the provinces also reported setting up isolation wards in private hospitals in collaboration/rented for few months. In May, one of the media reported that the government had not given official permission to private hospitals to

treat the COVID-19 patients. However, one of the private hospitals at Kathmandu, HAMS hospital, was first to treat the COVID-19 patients when the patient denied going to public hospital. The hospital claimed that they followed all the government protocols during the case management. There was no coverage from media after the incident. The isolation wards were set up across the provinces and local level. Some of the provinces provided awareness sessions on COVID-19 and psychosocial counselling in isolation wards. After the first local transmission was confirmed and cases start to surge, the establishment of isolation wards sped up during between March and May across all provinces, yet most of the hospitals did not adhere to government directives stating that there is a shortage of ICU beds and the hospitals cannot manage ICU beds with isolation wards and ventilators. The isolation wards were concentrated in the district hospitals, public hospitals, community hospitals and few private hospitals in urban area. The media reported that health workers were scared to go to isolation wards both in rural and urban municipalities as they did not have adequate protective equipment.

Between April and June, the news was flooded with the influx of the suspected cases in isolation wards and inconsiderate management of isolation centers both at urban and rural sites. There was shortage of isolation wards across the country, and there were a few reports where infected cases were shifted to quarantine centers and school buildings for treatment. This had raised concern over the security of non-infected people living in that centers. In addition, media also highlighted the role of the private sector in contributing to the establishment of isolation ward in order to prevent and treat COVID-19 cases. One of the media reported that Rungata Welfare Society, Jagadamba Cement and Lions Club had supported additional 15 beds in isolation wards of Narayani Hospital, Birgunj metropolitan city. The hotel associations were also actively engaged in allocating their hotel rooms for isolation wards in coordination with government. However, there was no news coverage on the contribution of other national/international organizations and private health sector.

In early June, with a shortage of isolation wards and spaces countrywide, the government declared that infected people who do not possess any symptoms of COVID-19 or have mild symptoms are allowed to stay at home. This provision was made in the guideline issued by the government on isolation management of corona patients. Those who had difficulty in staying at home with care, the guideline states that they can stay in a government-designated hospital or isolation center. The health experts raised concern over this decision as this would only

increase the risk of community transmission as there were no effective mechanism to monitor people staying in home isolation. Ministry of Health and Population had urged provincial and local government to make special arrangement for women and children in isolation wards. MoHP prepared "Health Standards for COVID-19 Infected in Isolation" on 29 June, 2020 which mentioned about the management of separate rooms, bathroom, and soap and water for males and females. [45] In response to guideline, Dhangadi sub-metropolitan government prepared gender friendly isolation and holding center in Sudurpashchim province.

As of 25 August, of the total active cases, 9,154 patients were in institutional isolation while 4,561 were in home isolation.

"A model holding and isolation centre has been set up in Kailali's Dhangadhi, targeting female citizens. "The holding center will be used to keep women, including those pregnant, who come to Dhangadhi from all 88 local levels of the Sudurpashchim Province for treatment and who are in difficult situation. The isolation will be used to keep COVID-19 infected persons of the sub-metropolis, The holding and isolation centre will have a round-the-clock presence of health workers, female security personnel and ambulance."

Sudurpashchim Health Directorate Director said, (25 July 2020)

Challenges in managing the isolation centres

The readiness of the health care system was hindered by the inadequate supply of PPE, limited number of beds and wards, limited ICUs and ventilators that made it difficult for health workers to manage the cases. Media reported that in several isolation centers, the patients were dissatisfied for not getting adequate water and food. There were also reports that doctors were not visiting the patients but only making phone calls to assess their health condition. Patients were not feeling safe in quarantine and isolation centre. For example, a patient fled from from Teku hospital due to poor management and safety at the isolation ward. Due to the limited number of isolation wards and increasing number of COVID patients, the hospitals were forced to keep the infected and non-infected patients in the same wards without separate bathroom. This had led to the risk of infection of non-infected people.

Treatment of COVID-19 cases

The first COVID-19 case, was first found in an individual who returned from China. He was admitted at STIDH in Kathmandu after he complained of respiratory problems and inflammation in the throat. He was treated with broad-spectrum antibiotics and supportive therapies. Before he was discharged, STIDH had collected his throat swab and blood sample, and sent it to the World Health Organization collaborating centre in Hong Kong for test. During the time, Nepal did not have any diagnostic facility to test COVID-19 infection in the country. He was tested positive for the COVID-19, afterwards, the Ministry of Health and Population announced that six beds at STIDH have been allocated for isolation of patients with COVID-19 symptoms. The healthcare facilities outside the capital lacked test kits and diagnostic facilities and were referring suspected COVID-19 case to Kathmandu. Despite the decision made at the federal level to have designated hospitals mainly public, in selected city areas outside the valley for treatment of COVID-19, they could not function well because of the lack of facilities. Following the declaration of COVID-19 as pandemic and taking precaution that Nepal could experience the outbreak as well, health authorities started to prepare by increasing the number of ICU and isolation wards in hospital for treatment. At that time there were only 70 beds at ICU at level – 3 public hospitals in Kathmandu, 30 beds at paediatric ICU at level-3 hospitals and 150 ICU beds in private hospitals, which were occupied most of the time. During this time, MoHP had adopted four strategies, one with special focus on preventing the disease from entering the country and rest of the three strategies related to raising public awareness, strengthening quarantine facilities, and boosting treatment facilities for those infected. Nepal had 2,000 hospitals across the country, of which only 150 were public, besides there were 4,000 health centres run by the government. Hospitals across Nepal, both public and private, have 700 ICUs, but none of these facilities had so far been allocated to treat coronavirus patient. Nepal's largest public hospital, Bir hospital at Kathmandu had 23 ICUs and 20 ventilators, there was a need of more ICU beds in single rooms to treat coronavirus patients. On 21 March, Government officially announced, that hospitals should not send patients with flu symptoms and COVID-19 patients to other hospitals rather it should provide treatment on their own and send the samples to the Nepal Public Health Laboratory. However, refusal for treatment of COVID-19 cases were frequently reported in the media. One of the media reported that 27 COVID-19 patients from Jhapa had to spend the night outside BP Koirala Institute of Health and Sciences of Dharan municipality, Province 1. The hospital had refused

to admit the COVID-19 infected persons, who had reached the hospital at 10:00pm, citing lack of beds. They were admitted to the hospital only next morning after Ministry of Social Development Ministry intervened in this matter. The stigma around COVID-19 and social discrimination against the marginalized group in the society exacerbated the challenge associated with COVID 19 treatment. Because of which suspected COVID cases belonging to these communities were denied of the treatment at the hospital.

During the first phase of lockdown, March–July, in Kathmandu Valley itself, 14 hospitals, including nine publics, three private and one community level, were designated for the COVID-19 patients, it was reported that majority of the people tested for coronavirus were compelled to stay at home isolation due to lack of isolation beds. The number of infections spiked after lifting the lockdown and put pressure on the government hospitals for treatment of the COVID-19 patients. As a consequence, the government came up with the fee structure for treating COVID-19 patients in designated private hospitals. Private hospitals could charge from Rs 3,500 to 15,000 ($30 to $128) a day for the treatment of a COVID-19 patient depending on the severity of the case. [29] During this time, the government also enlisted hospitals for treatment of COVID-19 classifying them into Level 1, Level 2 and Level 3. In late June, council of ministers decided to make arrangement for treatment of COVID-19 patients in private, non-governmental, cooperative and community hospitals wherein the government hospitals fall short of services for the infected as needed.

In early August, as the number of COVID-19 cases continued to escalate in the country, Kathmandu based Tribhuwan University Teaching Hospital performed the country's first successful plasma therapy to save the life of an elderly patient. With the number of COVID-19 fatalities surging in Nepal, doctors were advocating plasma therapy for critically ill patients. But there was shortage of medicine experts on transfusion in the country, particularly outside Kathmandu, and if plasma therapy was to be expanded, then medical staff had to be trained. Besides, as infected cases were burgeoning, the Health Ministry made it clear that the government would not provide treatment cost for those who get admitted to private hospitals for COVID-19 treatment, this was a contrary statement to what they committed in late June.

Box 3: Denial of right to get the health care services

Marani Devi Sada, 45, of Mulabari in Dhanushadham Municipality, struggled for medical care after the hospital refused to treat her. Sada was admitted to Godawari Modern Hospital this morning. She was suffering from high fever (103.4-degree Fahrenheit). Godawari Modern Hospital then referred Sada to Janakpur Provincial Hospital, suspecting she had contracted the novel coronavirus. Sada, also a chronic patient of heart ailment, was asked to be placed in quarantine as soon as the provincial hospital authorities went through the referral paper issued by Godawari Hospital. Janakpur Provincial Hospital refused to treat a poor Dalit woman, who had high fever. Sada's temperature was also not measured in the hospital and no doctor attended to her. Sada's daughter, Kari, said nobody paid any attention to her mother in the provincial hospital after they went through Sada's referral paper." (THT 18-03-2020)

3.3 COVID-19 and its Impact

3.3.1 Impact on livelihood

Nationwide lockdown to control spread of COVID-19 resulted in the shutting down of businesses across all sectors leaving hundreds of thousand people jobless. This unemployment triggered mass exodus particularly of people who worked as daily wage labourer from major cities including Kathmandu. Besides, street vendors, poor people and PWD in city areas were hit hard by the restrictions made to contain COVID-19. During the period, different sectors

carried out studies to understand the effect of COVID.

रोगको भन्दा भोकको पीर

लकडाउनले काममा जान नपाएका मजदुरहरू घरमा खानेकुरा सकिएपछि विहान उठ्नेबित्तिकै परिवारसहित पशुपति जान्छन्, दिनभरि कसैले केही खुवाउँछन् कि भन्ने आसमा भौतारिन्छन् । कसैले केही दिए खान्छन्, नदिए साँझ परेपछि भोकै कोठा फर्कान्छन् ।

Photo 4: Screen shot of a news published in Kantipur daily on 5 April 2020 that says 'people are more worried of starving than the fear of disease'

Food crisis hits *haliya* families hard in Bajura

Prakash Singh
Bajura, April 8

With the announcement of nationwide lockdown to contain the possible outbreak of coronavirus, food crisis has hit daily wage earners, especially *haliya* families hard in Bajura.

Freed *haliya* Ganga Ram Luhar in Budhinanda Municipality says the food crisis has hit 48 *haliya* families hard at Pipaldali and Tithichaur of the municipality.

Rangi Luhar, a local, said daily wage earners were facing acute food crisis due to the lockdown. Nepal government had constructed houses for 15 *haliyas* of the then Jukot, Wal, Pipaldali, and Birsain at Tithichaur of Budhinanda Municipality.

Some *haliyas* had returned to their former landlord leaving their house behind after they could not manage daily meals for their families, while some have been working as daily wage earners at Kolti Bazaar.

Civil Society Leader Janesh Bhandari says the *haliyas* have been struggling for food as there was no way to manage their daily meals due to the lockdown. He said they were been managing daily meals for 10 members of a family by crushing gravel and stones and sifting sand.

Rangi said all work had been halted due to the lockdown. "I do not have land to plant crops," he said, adding that he had been running the family with daily wages. "My family have not been eating sufficient food since the government imposed the nationwide lockdown," he added.

Chandaya Luhar faces a similar plight. He sells firewood in Kolti Bazaar and works on the landlord's field. "We are bound to stay inside the house and have not been able to go out to collect firewood due to the lockdown," he added.

As many as 65 people of seven families have been staying at Tithichaur.

Dalu Nepali said all the *haliyas* share the same plight as they run their families with daily wages. He said the haliyas used to manage daily meals by working in Kolti Bazaar and Liluchaur among other places. He added that since the government had imposed the lockdown, it had to manage the food for them.

Mayor Padam of Budhinanda Municipality Giri said daily wage earners among other labourers have been facing the problems of food shortage. He said the municipality has invested some amount in coronavirus prevention and emergency fund. He said that Rs 50 lakh was invested in the fund. Giri informed that the municipality has decided to provide relief to daily wage earners and *haliyas* from the fund. The government had distributed identity cards to 1,189 *haliyas* of different categories.

A freed *haliya* informing about the food crisis in Budhinanda Municipality, Bajura, on Wednesday.

Photo 5: Screen shot of a news published in The Himalayan Times on 9 April 2020

A study from Ministry of Women, Children and Senior Citizens reported that people living in poverty, PWD, mental illness and poor health conditions were pushed to beg on the streets and temple premises. The lockdown measure severely affected their livelihood. Another study by Nepal Chamber of Commerce reported that daily wage earners were hit the worst by the

COVID-19, and they were facing difficulties to sustain their livelihood, thousands of daily wage workers returned home from city areas on foot travelling for days. Media frequently reported that people travelled hundreds of kilometers as all transportation means were at standstill due to lockdown. Though some local levels facilitated returns of poor urban dwellers, still most of daily wage earners faced difficulties to sustain livelihood and were not helped by the government. According to the media report, relief assistances were insufficient to the daily wage earner as the lockdown period kept extending. The media also reported on the lack of relief for daily wager. One report cited World Food Program report that the lockdown was creating market failure, with instances of farmers having goods spoil at the farm even as market prices soar. Households affected by the lockdown, work stoppages and movement restrictions are in most instances resorting to coping strategies. There has been adverse economic impact of COVID-19 on Nepali people. Following the outbreak, Nepal lowered its forecast for growth for the fiscal year that ended in mid-July to 2.3 per cent from 8.5 per cent. About 20 per cent of Nepal's 30 million people live on a daily income of below $2 and are heavily dependent on the informal sector.

3.3.2 Disruption of routine health care services

The country started to experience difficult socio-economic transition after the first nationwide lockdown was imposed, following the surge of COVID-19 cases. This affected the overall health care seeking behaviour of the people along with the service delivery practice. Media reported that most of the private and some of public hospitals refused to deliver the regular outpatient and inpatient care services amidst the COVID-19 outbreak. This was mainly due to the fear of the health workers on COVID-19 transmission, inadequate knowledge, and skill to manage the case, and unavailability of PPE along with inadequate readiness of the health facilities to deliver the service. The hospitals particularly refused to admit patients of unidentified illness. Amidst the lockdown, media reported the experience of many patients suffering from non-communicable disease who could not receive the periodic health check-up. Similarly, other routine health care services like antenatal care, delivery care, and immunization service were also affected.

"The government has temporarily halted all programmes related to vaccination, vitamin A supplementation and deworming due to the threat posed by the novel coronavirus disease".

(16 April 2020)

Besides, the fear and stigma associated with COVID-19 made them to refer the patients/clients, other than COVID-19, from one hospital to another hospital in the city and in some cases, they were neglected even at the referral hospital. In response, Ministry of Health and Populations stated that private hospitals should take patients in and further stressed that not anyone suffering from fever means s/he has coronavirus infection. In Province 1, Ministry of Social Development directed both private and public hospital authorities for uninterrupted service delivery. Despite of such response, news continued to report refusal cases from private hospitals particularly from Province 1. Such news on refusal to treatment frequently reported in media until May. However, after June there had been negligible news coverage on such cases.

Box 4: Effect on routine delivery care service:

On 1 May 2020, an expectant mother was admitted for delivery in a private hospital of Biratnagar city, Province 1. The hospital authorities learnt that she was from Udaypur district, where recent COVID-19 outbreak was reported. They performed clinical tests and found that she had fever. The doctors referred her to nearby public hospital when the operation was about to begin. Whereas the same public hospital reported that she did not have fever when she arrived there, and further clarified that they wouldn't have operated on her if she had fever. The news, however, did not mention anything about communication between the hospital on referral. Consequently, the mother in her labour pain suffered during the process.

3.3.3 Community behaviour around COVID-19 stigma

Media reported various incidents of discrimination, stigma, inequality, exclusion, and exploitation associated with COVID-19. One of the major issues reported was on stigmatization. The news detailed the experiences of COVID-19 infected individuals, returnee migrants and health workers on discriminatory behaviour from society. Due to misconceptions around COVID-19 transmission, the infected individuals were excluded in the society and deprived them of their rights to get treatment. The returnees from India and other countries also faced unwelcomed behaviour in the community. Besides, health workers were also the victim of stigmatization.

A local level representative placing a red flag on the rooftop of a foreign returnee's house in Dolakha, on Wednesday.

Foreign returnees facing humiliation

Himalayan News Service
Dolakha, April 1

People, who returned home from abroad, complained they were misbehaved as locals held the view that they had brought coronavirus to Dolakha.

A resident of Ward No 6 in Kalinchowk Rural Municipality said locals had been humiliating the returnees from virus-hit countries of late. Some returnees from India, Saudi Arabia and the UAE bemoaned that there was no conducive environment to live in the village.

A youth spotted at Charikot Hospital for health check-up complained that villagers had been manhandling him ever since he returned from Saudi Arabia. "I came to the hospital for health check-up after villagers misbehaved with me saying I had contracted the deadly virus," he added.

He urged health workers to provide him with a certificate confirming that he did not have the virus. Dr Binod Dangal at Charikot Hospital said that five persons returning from India, Saudi Arabia, and the UAE had visited the hospital for health examination today. "Their health is okay," he said.

According to Dr Dangal, many returnees from abroad at other local levels were also facing the same behaviour from the locals. "Those returning from COVID-19-hit countries have to stay in home quarantine for 14 days. Thus, there is no need to manhandle returnees", Dr Dangal added.

Photo 6: Screen shot of a news published in The Himalayan Times on 2 April 2020

There were several reports on difficulties faced by health workers living in rented house. They were frequently asked to leave the house and were perceived as a risk of COVID-19 by the neighbours and house owner. Stigma was so deeply rooted that a group of people in capital city even protested in front of a house where health workers were staying in isolation. The protestors hanged a banner bearing the words- "house of COVID-19 infected person".

3.3.4 Violence against women

The media news pointed out escalation of gender-based violence, domestic violence, rape and other forms of sexual abuses during COVID-19 pandemic. According to media reports, between March 11 and June 6 alone, as many as 624 cases of violence against women and girls were reported. Violence was not only reported from the household level, but also from the quarantine centres particularly on sexual abuse. The interplay of socio-economic impacts worsened lives of people. As large number of migrant workers returned from urban cities to rural areas, their families faced livelihood problems making them more vulnerable to crime and violence.

3.3.5 Impact on psychosocial wellbeing

There have been considerable media coverage on the issues that have adversely impacted on mental health of people mainly the health workers and COVID-19 infected patients. Besides, psychosocial distress in patients of NCDs and CDs who did not receive the services, and fear and panic in the general population who lived under stress for possible contraction of COVID-19 disease also reported frequently in media since GON imposed nationwide lockdown. Incidents of suicide, related to severe mental disorder and life stress, have also frequently appeared in media, however, the causes were mostly unreported. In the initial consecutive 16 days of lockdown, average incidents of suicide were 16 deaths per day which was higher compared to equivalent period of previous year. Mental health experts highlighted that people suffered from confusion, fear, insomnia, eating disorder, sadness, boredom and numbness, as major mental health problems during the lockdown. They also felt stressed about being away from the family because of this lockdown that affected their mental wellbeing. According to the media reports, some suicides have taken place in quarantine and isolation centers as well.

. The media reported experts' views on mental status of the quarantined people. According to them, people living in quarantine can commonly experience fear, uncertainty, sadness, confusion, anger, sleeplessness, anxiety, worries, lack of concentration, irritation, low self-esteem and aches or pains during their stay there, many of whom, are likely to suffer from anxiety and depression. The mental stress was commonly reported among health workers as well. Health workers were stressed mainly because of the fear of transmitting the disease to their family members. One of the media quoted a study conducted by Tribhuvan University Institute of Medicine and National Medical Science Academy, that 54 percent of frontline health workers had suffered from anxiety due to COVID-19 pandemic. In May, the federal government made an attempt to respond to mental health issues of frontline health workers. Epidemiology and Disease Control Division prepared Mental Health and Psychosocial Support (MHPSS) COVID-19 Preparedness and Response Framework to integrate mental health services in the COVID-19 health response of the government. The framework aimed to strengthen primary care services to provide essential mental health services in the aftermath of the COVID-19 pandemic. Similarly, STIDH also provided psychological counselling support and treatment of illnesses following a few incidents of patients' nervousness and stress who were admitted in the isolation centers.

4. Discussion

COVID-19 posed serious challenges to public health across the globe as the health system in many countries faced difficulties in responding to the pandemic. News media during the study period reported that some of the countries like New Zealand were better off in responding to the first wave of COVID-19 while others were much harder hit including US, Italy, UK and India. Nepal too, struggled in responding the pandemic that includes to steer the health system ensuring its continued functioning. Responding to COVID-19 has been challenging for resource poor country like Nepal that had not experienced pandemic like emergency like COVID-19 before, although the country had experienced massive earthquake in 2015. Moreover, the resilience of federal government to respond to such situation has been tested for the first time since country adopted federal system. The study highlights the response measures taken by GoN to contain and prevent the COVID-19 pandemic situation, and identifies the existing gaps and challenges to its effective implementation. Moreover, it also assesses role of private sector in COVID-19 response and prioritized measures targeting the urban poor.

The first case was detected in Nepal and WHO alerted the global community for public health emergency in January 2020. The first and foremost step to deal with such emergency situation is to have a clear structure that steers the overall response. In Nepal, HLCC was formed in late February, this delay affected the timely preparedness response to tackle the emergency. Media criticised the HLCC for steady PCR testing amidst the rising the COVID-19 cases. There were also duplications of work between the HLCC and CCMC. In some cases, decisive actions were led by council of ministers that suggested the lack of clarity within the government on leading the process. Later, CCMC overtook the HLCC, and the latter was dissolved. Nepal's COVID-19 response is mainly based on infectious disease act 1964 [46] that was formulated six decades ago. India also took similar action where a 123 years old act was invoked, [47] and the clauses under the law was very similar to that of Nepal. Legal experts believed such act was outdated and undermined the right to life and livelihoods, individual freedom and right to food and shelter, and particularly in the lockdown period, media frequently reported on these issues as thousands of lives were severely affected. Several countries, such as the UK passed the Coronavirus Act 2020 during this period to address the new pandemic. [48] In Nepal also, the Legislative Management Committee of the National Assembly had directed the government

to enact another updated law to fight against the epidemic since the Infectious Disease Act 1964 in Nepal was outdated but no progressive step by the government was reported in the media. Provincial authorities were mainly implementing the directives from the federal authorities, mainly HLCC and Council of ministers. Later, the CCMC were formed at the provincial and municipal level. Based on the infectious disease act 1964 on which the federal government empowered the district level authorities by forming CCMC when COVID-19 cases surged after the first lockdown was lifted. The delayed formation of CCMC at local level impacted early response due to lack of intersectoral coordination at the sub-national level. On the other, federal leadership undermined the roles and created confusion at the implementation level amongst the provincial and local level authorities, who were elected as people's representatives.

In this section we have attempted to discuss the government response referring the WHO identified five major strategies to control the pandemic. [49] These strategies are to: **mobilize** all sectors and community, **control** sporadic cases and clusters and prevent community transmission, r**educe** mortality by COVID19, **suppress** community transmission, and **develop** safe and effective vaccines and therapeutics. We will be mainly discussing on the first three measures; **mobilize**, **control,** and **reduce** strategic measures applicable to Nepal during the study period.

Under **mobilize**, government developed steering mechanism involving different sectoral authorities in in CCMC both at national and subnational levels. The government in its early phase of response only considered the public entities, completely ignoring the private health sectors, mainly the hospitals. Evidence suggests that private health sectors is one of the major health care providers in Nepal that employ around 40% of health workforce. Amidst continued reporting on shortages of HRH to respond the COVID-19, government lacked to initiate the measure to engage and mobilize the private health sectors which was a missed opportunity. Furthermore, this also affected the routine health care services delivered by the private hospitals amidst the fear and lack of preparedness for COVID-19 management and thus most of COVID cases were referred to public hospitals by the private sector. Later one, with the continuous rise in COVID-19 cases, the government developed policies for engagement of private sectors in COVID-19 preparedness and response through a partnership model based

on approved cost reimbursement. Thus, private hospitals started to diagnose and treat the COVID-19 patients aligning to government protocols.

At the subnational level including both rural and urban municipality along with community people played a supportive role in identifying individuals who were exposed to confirmed COVID-19 case. The government engaged with multi-sectors including education, hotel and tourism industry, health, drinking water etc. including the private sectors to establish quarantine centers.

As **control** measures, media mainly reported case investigation, isolation of positive cases and quarantine of exposed individuals. The limited diagnostic facilities, under trained staff and lack of PPE were frequently reported challenges to carry out the effective case investigation process. Space management for isolation and quarantine amidst rising COVID-19 cases and influx of returnees from India were the most difficult challenges the government faced. Although, standard protocols were made for the quarantine, local authorities were not able to execute them. Moreover, the government control measures in city areas lacked to consider the urban poor who resides in vulnerable space to contract the infection. Key attributes like inadequate water supply, overcrowding and poor economic status almost made it impossible for them to adopt the preventive measures like social distancing, hygiene and wearing mask. Such slum settlements are potential hotspot for COVID-19 infection, [50,51] and prioritized case investigation in such settlement would have been pivotal to contain the infection. Additionally, the provision of mandatory PCR testing of all individuals, in both urban and rural areas, after 14 days wasn't implemented because of the limited diagnostic facilities. One of the major gaps identified to implement the **reduce** measure was that the existing poor health service readiness and availability. The government designated COVID-19 hospitals across the country but media commonly reported understaffing, lack of trained human resources, under equipped, shortages of essential medicines, and limited space in these COVID-19 hospitals. Similar observations were also made by other studies conducted in Nepal. [52,53] Preparation of the GoN was not sufficient to meet the need, for instance despite unfulfilled sanctioned position, the media report and policy review did not reveal significant government strategy to recruit and mobilize the human resource. Moreover, human resources who were mobilized in the prevention and management of COVID-19 lacked adequate protective measures that was also reported commonly in other countries. [54,55] Besides, when the health system was

frequently reported being underprepared, government of Nepal mired in controversy on procurement of medical supplies and diagnostic kits. Amidst the surging COVID-19 cases, the growing incidence on disruption of routine health care services posed a serious threat to sustain health achievement made till now. As media reported routine health care services like maternal and child health care services, NCD related services, were severely affected by COVID-19 situation, other scientific studies published in high impact journal also reported similar findings, for instance institutional delivery was reduced by almost half, and quality of health care services degraded due to COVID-19 situation. [56]

People sought private health care services as an alternative option, which was more expensive and unaffordable for vulnerable population from the poor and disadvantaged communities who were worst affected and were at higher risk of COVID-19. However, private hospitals were more restrictive in treating patients and often demanded COVID-19 tests (which involved higher costs and was done only in a few designated COVID-19 hospitals/laboratories) before they could admit the patients.

Supreme court (SC) had to intervene on several occasions when GoN was not able to efficiently respond. The interim order by the SC included immediate action on halting of flights to and from the high-risk countries and transits and to take necessary precautionary measures. Amidst the challenging and hazardous environment for health worker, the SC issued an interim order to the government to immediately provide free PCR tests to the frontline and quarantine personnel as per the WHO guideline. The order also required reasonable arrangements in the quarantine facilities and the care and security for frontline workers together with provision of quality PPE. SC also ordered not to implement National Testing Guidelines for COVID-19 that allows quarantined people to leave after 14 days without PCR testing.

Media also reported that the isolation and quarantine services were not adequate to provide effective care for COVID-19 patients. Isolation, and quarantine services were also affected by the lack of coordination between the three tiers of governance with poor accountability and responsibilities by each one of these tiers. The media reports also informed that quarantine did not meet the standard as specified by the guideline prepared by the federal government in both urban and rural areas and people living there were treated in disrespectful manners. The COVID-19 pandemic adversely affected livelihood of urban poor as response was not able to meet basic needs of poor people living in the cities that resulted into mass-migration from

cities to the villages. Although in April, 2020 federal government asked and directed chief administrative officers of all local levels both urban and urban municipalities to collect the data of individuals and families who are likely to face threat of famine, no significant news coverage was found in media about systematic intervention to support their livelihood although there were sporadic news coverage on food stuff distribution in some municipalities.

Limitation: The results presented and discussed are solely based on the reporting from selected media with policy references, thus there are chances that relevant news that are covered in other media might not have been covered here. Besides, the study timeline for media review is January to August 2020, although we have review policies up to December 2020, hence any further development on system response and the challenges from media perspectives are not reported here. During the data extraction phase, there were several other themes identified but not all of them were included in the report. Although, we initiated this study as urban centric, given the responses were mostly from the federal government and applicable to all areas, it was difficult to segregate the urban-rural response. Besides, including both the areas, we provided comprehensive landscape of the overall response measures.

Annex 1: Themes/Sub themes used in media review

Themes/Sub themes	Description
Governance	
Coordination and communication between governments	This will include all information regarding how the three tiers of government have/have been/are coordinated/ing amongst themselves, issues in co-ordination process, impacts of poor co-ordination, etc. The three tiers include Federal, Provincial and Local levels of the government. Additionally, the communication/coordination from other personnel/bodies of the government like Supreme Court, National Human Rights Commission, MoFA, MoFALD, MoE, MoHP, etc. are also to be included here.
Decisions/actions by federal government	All the decisions made by federal government and any actions taken in response to COVID-19. If the information is about the federal government planning or willing to make any decisions, we do not include here.
Decisions/actions by provincial government	All the decisions made by provincial government and any actions taken in response to COVID-19. If the information is about the provincial government planning or willing to make any decisions, please do not include here.
Decisions/actions by local government	All the decisions made by local government (within municipalities) and any actions taken in response to COVID-19. If the information is about the local government planning or willing to make any decisions, we do not include here.
Political voice	Issues raised by politicians from all three tiers regarding COVID-19 issues. This includes voices from party leaders, parliament members, political figures, etc.
Coordination and communication by non-government bodies	Issues raised or any message/instructions directed by any other persons and non-government bodies for management of COVID-19 from seven provinces. This could include health experts, people from private sectors, uni-lateral, bilateral, or multilateral organizations outside the govt. Eg: FNCCI, UNICEF, UN, World Bank, ADB, etc.
Health message communication	All information on COVID related messages to public by authorized government body and others; helplines, dashboards, IEC materials, SMS, media use, etc
Procurement and availability of resources for testing, prevention, and treatment	
Procurement and availability of resources for testing and prevention	This information will focus on procurement, supply, distribution, and availability of logistics for testing and prevention of COVID-19, excluding PPE as it will be dealt separately. Eg: Procurement of test kits, viral media, PCR machines, etc.

Themes/Sub themes	Description
Procurement and availability of resources for treatment of COVID and non-COVID health services	This information will focus on procurement, supply, distribution and availability of medicines and logistics (ventilators, oxygen etc.) for treatment of COVID and non-COVID health services.
Personal protective equipment (PPE)	This will include all information regarding PPE, availability, use, issues, etc. Only the information regarding the PPE for the use of health workers and frontline workers will be included here.
Labs and testing services (both government and private)	This will include all information regarding labs and testing. Eg: policy, implementation of guidelines, facilities, services, transportation of samples, issues in labs testing (PCR, RDT), availability of equipment, sample sent to labs, sample/swab collection, etc.
Infection prevention and control	All information related to prevention and control of COVID-19 infection. Eg: establishment of hand washing facilities either in a facility or in public, waste management in health facilities, measures for maintaining social distancing, distribution of masks/sanitizers, disinfection of objects (vehicles, public areas), sealing off of health facilities for disinfection, etc.
Health system readiness	
Establishment of health infrastructures	This will focus on information related to establishment of new health facilities or reallocating a health facility as COVID specific HF or building new HF for COVID-19.
Budget allocation and distribution	What and how much budget is allocated for COVID-19, from which sources, how it is distributed to provincial and local governments and any other activities and issues related to financing for COVID-19?
Impacts on other routine health care services	This will focus on health system readiness in terms of managing and providing other routine services, if routine services are compromised because of COVID-19, prevention measures, etc.
Human Resource – Health	
Capacity strengthening	This will include COVID related training and orientation to health workforce including other individuals involved in COVID management and treatment.
Motivation/Incentives to person involved in	This will include information related to hazard pay, incentives or motivation packages to workforce involved in management, control, and treatment of COVID-19 infected patients.

Themes/Sub themes	Description
management and treatment	
Human resource mobilization	This will include all information related to health workforce (labs and health facilities, quarantine centres) regarding mobilization/ transfers, roles and responsibilities, new recruitment, and issues/ challenges.
COVID-19 management and treatment	
Diagnosis (Case identification)	COVID-19 cases identified and reported, status update of identified cases (total and new)
Contact tracing	This will include all information regarding contact tracing (Eg: policy, implementation of guidelines, process, issues/challenges, specific teams mobilized for contact tracing, further cases identified from a recently identified case, etc.)
Transportation of COVID-19 patients	This will include transportation system, management and issues related to transportation of COVID-19 infected patients.
Quarantine	This will include all information regarding quarantine. Eg: policy, implementation of guidelines, status update on number of people quarantined, quarantine facilities (allocated by govt.), services, basic supplies (food, sanitation), safety and security issues, self-isolation, etc.
Isolation	This will include all information regarding isolation in health facilities. Eg: policy, implementation of guidelines, status update on number of people isolated, isolation facilities (by hospitals/health facilities, govt. allocated), services, basic supplies (food, sanitation), safety and security issues, etc.
Treatment	This will contain information on treatment and referral services including transportation (allopathic, homeopathic and ayurvedic) from different health facilities (public and private). Also, include status update of those who are under treatment and who recovered (total and new).
Management of corpses	This includes information on funeral management of COVID-19 corpses by family, community, and government, if government protocols are being followed, hospitals not releasing the bodies due to delayed test reports, community reluctance in handling of corpses by the govt, etc.
Deaths	All news related to deaths due to COVID-19, also include COVID-19 cases identified after death
Health and Social impact on people	

Themes/Sub themes	Description
Socio-economic impacts on people	This includes information on social and economic impact on people due to COVID-19 crisis. Eg: Impact on daily life due to lockdown, no jobs, frustrations, effect on remittance, effects on religious practice, superstitions, cybercrimes, economic impact due to COVID-19 crisis, etc.
Impact on overall health of people	Effect on overall health of people with chronic conditions, access to health facilities for routine care, availability of health workers and services, etc. Eg: COVID cases participating in social functions
Mental health related issues	Mental health cases, suicide/suicide attempts, cases of self-inflicted wounds, issues in treatment and management, stigmatization (to the health workers, individuals in the community) due to COVID-19 infection
Relief packages	
Relief packages by the government	This includes information on relief packages announced by government for poor, marginalized, and vulnerable groups to help them during this crisis, did these people get the packages, what were the issues, frustrations, etc.
Relief packages by the non-government organizations	This includes information on relief packages provided to community people, poor, marginalized, and vulnerable groups during COVID-19 by any local non-government organizations, individuals, clubs, international associations, etc.
Support received by Government	
Finance	This will include support in cash received by government of Nepal from various national and international agencies and governments for the management and control of COVID-19, report finance and items separately.
Items	This will include support in items received by government of Nepal from various national and international agencies and governments for the management and control of COVID-19, report finance and items separately.
Response measures at border entry points	This will include information of how Nepalis are returning home from India and other countries, how they are screened at the border, measures adopted at TIA, domestic airports and bordering areas in India, establishment of health desks and what provisions are at the border, etc.
Committees formed in response to COVID-19	This will include information about different committees formed at all three levels of governments, their implementation, issues in implementation, etc.
Development of policy, guidelines, SOP etc	This will include all information related to the development, revision and implementation of policies, guidelines, SOPs, etc. for responding to COVID-19.

Themes/Sub themes	Description
Information management system (HMIS, LMIS, e-LMIS)	This will focus on reporting mechanisms from various platforms like HMIS, LMIS, e-LMIS or any new reporting mechanisms adopted by the government.
Community engagement in COVID	This includes information on how the community reacted to COVID response. Eg: not allowing people to enter their villages, or preventive measures taken at community level, helping in community to take care of people returning homes, protests on govt.'s handling of COVID-19 crisis, volunteer works by the community people, etc.
Impact on other non-health government services	This includes all the information regarding the impact on all other non-health governmental services like administrative, water and sanitation, tax offices, transport offices, law offices and so on.

Themes/Sub themes used in policy review

Themes/Sub themes	Description
Case Investigation and Contact Tracing	
Case investigation	This includes the information of identification of suspected/probable/confirmed cases and taking case interviews.
Contact tracing	This includes the process of taking contact interviews and tracing contacts of confirmed cases.
Health message communication	This includes the details of health education provided to cases and contacts to prevent further risk of COVID-19 infection and instructions to follow if they manifest COVID-19 symptom.
Coordination with others	This includes the information regarding the coordination between CICT team and other stakeholders such as police for tracing contacts.
HR mobilization	This includes the information regarding HR mobilized for case investigation and contact tracing and their roles and responsibilities.
Information management system	It consists of different forms that CICT team should use for maintain proper records and reports.
Monitoring and supervision	This includes the details of responsible individual/team for monitoring and supervising the proper management, operation and implementation of CICT.
PPE	This includes all the information regarding PPE such as PPE management, and indications for using PPE for CICT team.
Quarantine	This includes the indication and length of quarantine/self-quarantine.
Referral system	This includes the details about the situation requiring immediate referral and management of transportation for referral.

Themes/Sub themes	Description
Clinical Management	
Admission criteria	This includes the criteria for the requirement of admission for individuals manifesting COVID-19 symptoms.
IPC	This includes the information regarding IPC such as standard precautions, droplet precaution, contact precaution, etc. that HWs should follow while managing COVID-19 patients.
Isolation	This includes the information regarding isolation room and requirement of IPC measures to be used in isolation.
Lab and testing services	This includes the information regarding testing criteria for COVID-19, sample collection and transportation and other tests.
PPE	This includes the information regarding indication of PPE, and category of PPE to be used during sample collection and transportation and clinical management.
Screening	This includes the information regarding screening process and triage management in the health facility.
Transportation of COVID-19 patients	This includes the information about the transportation of COVID-19 patients by following standard precaution such as using PPE.
Treatment	This includes all the information regarding treatment procedures of COVID-19 along with the management of complication of COVID-19.
Governance	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed for the prevention, control and management of COVID-19. It also includes the responsible authorities for budget allocation. Also, it includes the strategies that local level should consider for planning budget of next fiscal year.
Cleaning and disinfection	It includes information about cleaning and disinfection process conducted by government.
Clinical management	It includes the information regarding the unified hospital, COVID hospitals and hospitals running COVID clinic, their roles and responsibilities including the services delivered by them.
Committees formed in response to COVID-19	This includes the details of committees formed and should be formed in response to COVID-19 in different levels of government. It also consists of the roles and responsibilities of respective committees.
Coordination and communication between governments	This includes all information regarding how the three tiers of government have coordinated amongst themselves and importance of coordination between them.
Coordination with others	This includes the information regarding the coordination of HF with other HF/lab centers and government, coordination of government with other stakeholders.

Themes/Sub themes	Description
Decisions or actions by federal government	This includes the information regarding the decisions or actions taken by federal government that should be followed by provincial level, local level and HFs for the proper prevention, control and management of COVID-19. Moreover, it includes forms developed for rapid need assessment and planned recovery strategies to help local level.
FCHV mobilization	This includes the information of FCHV mobilization in the local level for health message communication and referral of individuals manifesting COVID-19 symptoms.
Health message communication	This includes the information regarding the implementation of health message communication programs, and available hotline services.
HRH mobilization	This includes the information regarding HR of health mobilized for COVID-19 management and their roles and responsibilities.
Information management system	This includes the information regarding the process of reporting of COVID-19 testing results and management to MoHP, EDCD and HEOC by COVID hospitals and hospitals running COVID clinics.
IPC	This includes the information regarding IPC such as avoiding direct contact, promoting telephone and internet services, etc.
Isolation	This includes the information about the identification of isolation center for isolating confirmed COVID-19 cases.
Logistic management	This includes the details of authority/committee/HR responsible for managing logistics (medical equipment and supplies, PPE sets, etc.) for COVID-19.
Management of corpse	This includes the information about the authority responsible for management of corpse.
Monitoring and supervision	This include the information regarding the responsible authorities for monitoring and supervision of ongoing work for COVID-19 management.
Motivation or Incentives to HR	This includes the information regarding the provision of incentives for HR engaged (including HR in contract) in testing and treatment of COVID-19. Also, it includes the assurance for treating them if they get COVID-19 infection.
Other routine health services	It includes the directions provided by government to hospitals to run other routine health services.
Other workforce	This includes the details of engagement and mobilization of other workforce such and police, volunteer, public representatives, etc.
PPE	This includes the details of authorities responsible for managing PPE for HR.
Procurement and availability of resources for testing, prevention and treatment	This includes the information regarding forecasting and procurement of resources for testing, prevention and treatment and responsible ministries for that.

Themes/Sub themes	Description
Quarantine	This includes the information regarding management of quarantine for HWs. It also includes the coordination between different authorities for managing institutional quarantine in local level.
Referral system	This includes the details about the referral system and reporting to higher authorities.
Transportation of COVID-19 patients	This includes the information regarding the security bodies responsible for transporting COVID-19 patients from TIA and other border entry points. Also, it includes about other ministries responsible for facilitating that.
Urban poor	This includes the information about the government addressing the urban poor issues.
Role of government	This includes the roles and responsibilities of different sectors of government in response to COVID-19.
Relief packages	This includes information regarding the process of distribution of relief packages from the level of government.
HR-Health	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed for HR involved in the prevention, control and management of COVID-19. It also includes the responsible authorities for budget allocation.
Capacity strengthening	It includes the information about the training for HR and its requirement.
Cleaning and disinfection	It includes information about HR responsible for facilitating cleaning and disinfection process.
Contact tracing	It includes the information regarding the requirement of contact tracing and indications for conducting contact tracing.
Coordination and communication between governments	This includes all information regarding how the three tiers of government have coordinated amongst themselves.
Coordination with others	This includes the information regarding the coordination between HFs or/and HR and government.
FCHV mobilization	This includes the information of FCHV mobilization for CICT.
Health message communication	This includes the information regarding the conduction of awareness program for communicating health message in the community.
HRH mobilization	This includes the information regarding HR of health mobilized for COVID-19 management and their roles and responsibilities.
Information management system	This includes the information regarding the process of recording and reporting of CICT, COVID-19 management to different levels of government.
IPC	This includes the information regarding the infection prevention and control measure that HR should follow during prevention, control and management of COVID-19.

Themes/Sub themes	Description
Lab and testing services	This includes the information regarding testing criteria for COVID-19.
Management of corpse	This includes the information about the authority responsible for management of corpse.
Monitoring and supervision	This include the information regarding the HR and responsible authorities/government for monitoring and supervision of ongoing work for COVID-19 management.
Motivation or Incentives to HR	This includes the information regarding the provision of incentives for HR, FCHVs and volunteers engaged prevention, control and management of COVID-19.
Other workforce	This includes the details of engagement and mobilization of other workforce such and police, volunteer, public representatives, etc.
PPE	This includes the details of authorities responsible for managing PPE for HR.
Quarantine	This includes the information regarding management of quarantine for HR, physical infrastructure of quarantine.
Role of government	This includes the information regarding the roles and responsibilities of three levels of government for facilitating HR to carry out their works.
Infection Prevention and Control	
Capacity strengthening	This includes the information regarding training of hand washing and donning and doffing of PPE.
Cleaning and disinfection	It includes the information regarding indication of cleaning and disinfection, different forms of disinfectants to be used and precautions to be taken while handling disinfectants.
Hand hygiene	This includes the indications and process of maintaining hand hygiene.
HF preparedness	This include the information regarding the preparedness that HF should do for IPC.
HRH mobilization	This includes the information regarding HR of health mobilized for COVID-19 prevention and management along with their roles and responsibilities.
Isolation	This includes the information regarding the IPC measures to be followed in hospital isolation.
Management of corpse	This includes the information regarding IPC measures to be followed while managing corpse.
Monitoring and supervision	This includes the information regarding responsible HR/authorities to monitor and supervise IPC measures.
PPE	This includes all the information regarding PPE use, donning and doffing.
Waste management	This includes the information regarding the health care waste management.
Isolation	

Themes/Sub themes	Description
Cleaning and disinfection	It includes the information regarding indication and process of cleaning and disinfection in isolation center/room.
Clinical management	It includes the information regarding clinical management of confirmed COVID-19 cases in isolation center/room.
Criteria for isolation	It includes the criteria for isolation and indication of individuals requiring isolation.
Establishment of health infrastructures	This includes the information regarding the requirement of health infrastructures for establishing isolation.
Hand hygiene	This includes the indications and process of maintaining hand hygiene in isolation/home isolation.
Home isolation	This includes all the information regarding home isolation and rules to be followed in home isolation.
HRH mobilization	This includes the information regarding HR mobilized in isolation room/center and their roles and responsibilities.
Information management system	This includes the information regarding recording temperature of individuals in isolation and reporting to higher authorities. It also includes details about SMS reporting system.
IPC	This includes the information regarding the infection prevention and control measure that HR and individuals should follow in isolation center.
Lab and testing services	This includes information regarding the management of testing services for patients undergoing elective surgery.
Logistic management	This includes the information regarding the management of fooding, lodging, medical equipment, etc. in isolation room/center.
Monitoring and supervision	This includes the information regarding responsible HR/authorities to monitor and supervise the isolation room/center.
PPE	This includes all the information regarding PPE use, donning and doffing while working in isolation room/center.
Referral system	This includes the details about the situation requiring immediate referral to different levels of COVID hospitals and management of ambulance services for transportation.
Screening	This includes the information regarding the installation of screening point at hospital and categorizing individuals for sending in pre-isolation, isolation ward or home.
Waste management	This includes the information regarding the health care waste management of isolation center.
Lab and testing services	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed for lab and testing services for COVID-19. It also includes the responsible government for budget allocation.

Themes/Sub themes	Description
Capacity strengthening	This includes the information regarding training for conducting lab investigation for diagnosing COVID-19.
Cleaning and disinfection	It includes the information regarding indication and process of cleaning and disinfection in laboratory room.
Establishment of health infrastructures	This includes the information regarding the requirement of health infrastructures for establishing laboratory for cvd-19 testing.
Hand hygiene	This includes the indications and process of maintaining hand hygiene while collecting, transporting and handling samples.
HRH mobilization	This includes the information regarding HR mobilized in laboratory and their roles and responsibilities.
Information management system	This includes the information regarding recording, reporting and proper documentation of COVID-19 testing. Also, it includes about the reporting system of private labs to NPHL.
IPC	This includes the information regarding the infection prevention and control measure that HR should follow while working in lab and collecting and transporting samples.
Monitoring and supervision	This includes the information regarding responsible HR/authorities to monitor and supervise the lab and testing procedures.
PPE	This includes all the information regarding PPE use, donning and doffing while working in lab.
Private lab testing	This includes all the information regarding testing services in private laboratory.
Sample collection and transportation	This includes the information regarding the process and precautions to be taken while collecting and transporting samples for COVID-19 testing.
Sample packaging	This includes the information regarding the process and precautions to be taken while packaging samples for COVID-19 testing.
Testing criteria	It includes the criteria for COVID-19 testing.
Waste management	This includes the information regarding the laboratory waste management.
Management of corpse	
Care of dead body	This includes all the information regarding the care of dead body of COVID-19 patient.
Cleaning and disinfection	It includes the information regarding indication and process of cleaning and disinfection of room, surface, equipment, clothes, etc. that came into contact with dead body.
Hand hygiene	This includes the indications and process of maintaining hand hygiene during and after managing corpse.
Health message communication	This includes the information regarding the communication of health message of COVID-19 for prevention and control of infection.

Themes/Sub themes	Description
HRH mobilization	This includes the information regarding HR mobilized for managing corpse and their roles and responsibilities.
IPC	This includes the information regarding the infection prevention and control measure that HR and individuals should follow while managing corpse.
Lab and testing services	This includes information regarding COVID-19 testing of dead body.
Post-mortem	This includes all the information regarding post-mortem of COVID-19 positive dead body.
PPE	This includes all the information regarding PPE use, donning and doffing while managing corpse.
Transportation of dead body	This includes all the information regarding transportation of dead body, vehicle used for transportation and precautions to be followed.
Motivation or Incentives to person involved in management and treatment	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed as incentives for HR and volunteers involved in COVID-19 management and prevention. It also includes the responsible authorities/government for budget allocation.
Monitoring and supervision	This includes the information regarding responsible HR/authorities to monitor and supervise the implementation of incentive provision.
Provision of risk allowance	This includes the information about the risk allowance and its percentage to specific HR engaged in COVID-19 management.
Grant	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed as conditional grant for HF for COVID-19 management. It also includes the responsible authorities/government for budget allocation.
Monitoring and supervision	This includes the information regarding responsible authorities/government to monitor and supervise whether HF are providing services for COVID-19 as per the guideline.
Process of receiving grant	This includes the detail process for HF to receive grant.
Provision of grant	This includes the detail about the provision of providing grant to HF involved in management of COVID-19.
Other routine health services	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed for routine services.
Capacity strengthening	This includes the information regarding training on IPC, PPE, etc. for HR engaged in providing other routine health services.

Themes/Sub themes	Description
Cleaning and disinfection	This includes the details of indication and process of cleaning and disinfection while providing other routine health services.
Coordination and communication between governments	This includes information regarding coordination and communication between government HF providing routine health services and government.
Decisions or actions by federal government	This includes the information regarding the decisions or actions taken by federal government that should be followed by HFs and provide other routine health services.
FCHV mobilization	This includes the information of FCHV mobilization for facilitating the flow of other routine health services.
Hand hygiene	This includes the indications and process of maintaining hand hygiene while providing other routine health care services.
Health message communication	This includes the information regarding the communication of health message of COVID-19 for individuals coming to receive other routine health services.
HRH mobilization	This includes the information regarding HR mobilized for providing other routine health services.
Impacts on other routine health care services	This includes the information regarding the process of providing other routine health services during COVID-19 pandemic and impacts on other routing health services due to COVID-19 pandemic.
Information management system	This includes the information regarding the process of recording and reporting of suspected/probable/confirmed COVID-19 cases who came to receive other routine health services.
IPC	This includes the information regarding the infection prevention and control measure that HR and individuals should follow while providing/receiving other routine health services.
Isolation	It includes the information regarding isolation services (if requires) for individuals coming to receive other routine health services.
Lab and testing services	This includes information regarding COVID-19 testing for suspected cases coming to receive other routine health services.
Multi-sectoral engagement	This include the details regarding the engagement of NGOs, private sectors, and other stake holders for facilitating the flow of other routine health services.
PPE	This includes all the information regarding PPE use, indication, donning and doffing while providing other routine health services.
Referral system	This includes the details about the situation requiring immediate referral to different levels of COVID hospitals and management of ambulance services for transportation.
Screening	This includes the information regarding the installation of screening point at hospital and screening questionnaire.

Themes/Sub themes	Description
Waste management	This includes the information regarding the health care waste management.
PPE	
Cleaning and disinfection	This includes the details of process of cleaning and disinfection of PPE.
Criteria of PPE	This includes the list of criteria in which PPE should be used.
Hand hygiene	This includes the time and indication of hand hygiene before/during/after donning and doffing of PPE..
Quarantine	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed for managing and operating quarantine center. It also includes the responsible government for budget allocation.
Cleaning and disinfection	It includes the information regarding indication and process of cleaning and disinfection in quarantine.
Committees formed in response to COVID-19	This includes the details of committees formed and should be formed in response to management and operation of quarantine. It also consists of the roles and responsibilities of respective committees.
Coordination and communication between governments	This includes all information regarding how the three tiers of government have coordinated amongst themselves.
Criteria for quarantine	It includes the criteria for running quarantine center and indication of individuals requiring quarantine.
Hand hygiene	This includes the time and indication of hand hygiene in quarantine center.
Health facilities for individuals in quarantine	This includes the information regarding health facilities to be made available for individuals living in quarantine center.
Home quarantine	This includes information regarding the standards of home quarantines such as physical infrastructures, IPC, logistic management, safety of vulnerable groups and so on.
HRH mobilization	This includes the information regarding HR-Health mobilized for managing and operating quarantine.
IPC	This includes the information regarding the infection prevention and control measure that HR and individuals should follow in quarantine center.
Logistic management	This includes the information regarding the management of fooding, lodging for individuals living in quarantine center.
Other workforce	This includes the information regarding other workforce (volunteers, ward representatives, etc.) mobilized for managing and operating quarantine.

Themes/Sub themes	Description
PPE	This includes all the information regarding indication and use of PPE in quarantine center.
Safety and security	This includes the information regarding ensuring safety and security for individuals living in quarantine.
Waste management	This includes the information regarding the waste management of quarantine center.
Relief packages	
Implementation of relief packages	This includes the information about the implementation of relief packages distribution program from local level.
Urban poor	This includes the information about the government addressing the urban poor issues.
Response measures at border entry points	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed for the proper response measures at border entry points. It also includes the responsible government for budget allocation.
Capacity strengthening	This includes the information regarding training on IPC, PPE, COVID-19, etc. for HR engaged in health desk for screening.
Cleaning and disinfection	It includes the information regarding indication and process of cleaning and disinfection of vehicle transporting goods.
Coordination and communication between governments	This includes all information regarding how the three tiers of government have coordinated amongst themselves for responding at border entry points. This also includes information regarding coordination and communication between HF, HR, other organization and government.
Entry points	It consists of the list of border entry points.
Establishment of health infrastructures	This includes the information regarding the requirement of health infrastructures for establishing health desk for screening at border entry points.
Hand hygiene	This includes the time and indication of hand hygiene while running health desk and screening.
Health message communication	This includes the information regarding the communication of health message of COVID-19 for individuals at screening point.
Holding area	This includes the information regarding holding area for individuals coming from abroad.
HRH mobilization	This includes the information regarding HR-Health mobilized for responding at border entry points.
Information management system	This includes the information regarding the process of recording and reporting of suspected/probable/confirmed COVID-19 cases at screening point, daily update of health desk.

Themes/Sub themes	Description
IPC	This includes the information regarding the infection prevention and control measure that HR and individuals should follow at health desk and entry points.
Lab and testing services	This includes the information regarding COVID-19 testing provision and requirement of testing results of individuals to enter border.
Management of corpse	This includes the information regarding the transportation of corpse from abroad and its management .
Monitoring and supervision	This includes the information regarding responsible authorities/government to monitor and supervise health desk and screening process at border entry points.
Other workforce	This includes the information regarding other workforce (police, volunteers, etc.) mobilized for responding at border entry points.
PPE	This includes all the information regarding indication and use of PPE in health desk and screening point.
Quarantine	This includes the information regarding management of quarantine for individuals coming from abroad.
Referral system	This includes the details about the situation requiring immediate referral and management of ambulance services for transportation.
Role of government	This includes the information regarding the roles and responsibilities of government for operating and managing health desk at border entry points.
Screening	This includes the information regarding the installation of screening point at border entry points and screening questionnaire.
Waste management	This includes the information regarding the waste management of disposable items used while working at health desk.
Response plan	
Budget allocation and distribution	This includes the information regarding the budget allocated and distributed for responding COVID-19 nationwide.
Capacity strengthening	This includes the information regarding training on IPC, PPE, COVID-19, etc. for HR engaged in responding and managing COVID-19.
Case investigation and contact tracing	This includes all the information regarding CICT and CICT team.
Cleaning and disinfection	It includes the information regarding indication and process of cleaning and disinfection to prevent COVID-19 infection.
Committees formed in response to COVID-19	This includes the details of committees formed and should be formed in response to management of COVID-19. It also consists of the roles and responsibilities of respective committees.
Community engagement	This includes the information regarding the engagement of community in response to COVID-19.

Themes/Sub themes	Description
Coordination and communication between governments	This includes all information regarding how the three tiers of government have coordinated amongst themselves for responding COVID-19 pandemic.
Decisions or actions by federal government	This includes the information regarding the decisions or actions taken by federal government for responding COVID-19 pandemic.
FCHV mobilization	This includes the information of FCHV mobilization for facilitating the proper response to COVID-19 pandemic.
Health message communication	This includes the information regarding the communication of health message of COVID-19.
HRH mobilization	This includes the information regarding HR-Health mobilized for responding and managing COVID-19.
Impacts on other routine health care services	This includes the information regarding the continuation of other routine health care services and use of alternative measures for continuation of other routine health care services.
Information management system	This includes the information regarding the process of recording and reporting, development of information dashboard and data sharing.
IPC	This includes the information regarding the infection prevention and control measure that HR and individuals should follow.
Lab and testing services	This includes all the information regarding COVID-19 lab testing.
Management of corpse	This includes the information regarding the management of corpse.
Mental health related issues	This includes the information regarding mental health services and psychosocial counselling.
Monitoring and supervision	This includes the information regarding responsible authorities/government to monitor and supervise the overall response to COVID-19.
Motivation or Incentives to HR	This includes the information regarding the provision of incentives for HR engaged in management of COVID-19.
Multi-sectoral engagement	This include the details regarding the engagement of NGOs, private sectors, and other stake holders for facilitating the management of COVID-19.
PPE	This includes all the information regarding indication and use of PPE.
Procurement and availability of resources for testing, prevention and treatment	This includes the information regarding forecasting and procurement of resources for testing, prevention and treatment and responsible ministries for that.
Quarantine	This includes the information regarding management and operation of quarantine center.

Themes/Sub themes	Description
Response measures at border entry points	This includes the information regarding the response measures that should be taken at border entry points.
Safety and security of frontliners	This includes information regarding safety and security for frontline staffs.
Screening	This includes all the information regarding screening.
Surveillance	This includes information regarding surveillance.
Transportation of COVID-19 patients	This includes the information about the transportation of COVID-19 patients and PTT.
Waste management	This includes the information regarding the health care waste management.
Support received by Govt.	
Capacity strengthening	This includes the information regarding orientating staffs about supported items for proper operation and maintenance.
Delivery and distribution of items	This includes the decision of government to deliver only complete supported items and the information regarding the distribution of supported items.
Finance	This includes the information regarding the minimum amount for supporting items to government.
Quality monitoring	This includes the information about quality monitoring of supported items.
Screening	
Health message communication	This includes the information regarding the communication of health message of COVID-19.
Information management system	This includes the information regarding surveillance and reporting.
IPC	This includes the information about IPC measures for patients and health care authorities and workers.
Isolation	This includes details about clinical triaging and isolation.
PPE	This includes details about the indication and use of PPE.
Sample collection and transportation	This includes the information regarding the process and precautions to be taken while collecting and transporting samples for COVID-19 testing.
Screening process	This includes the information regarding the entire screening process.
Treatment	This includes information about supportive treatment for COVID patients.
Transfer of COVID-19 patients	
Capacity strengthening	This includes the information regarding training on PPE for HR engaged in transfer of COVID-19 patients.
Cleaning and disinfection	This includes information regarding cleaning and disinfection of aircraft used for transporting COVID patients.

Themes/Sub themes	Description
HRH mobilization	This includes the information regarding HR-Health mobilized for transferring COVID-19 patients.
Information management system	This includes the information regarding the process of recording and reporting to higher authorities/government.
IPC	This includes information about public health standards to be adopted while transferring COVID patients.
Logistic management	This includes the list of medical equipment required for transfer of COVID-19 patients.
Role of government	This includes the information regarding the roles and responsibilities of government for facilitating transfer of COVID-19 patients.
Screening	This includes the information regarding triage criteria.

Annex 2: Structure of CCMC at federal level

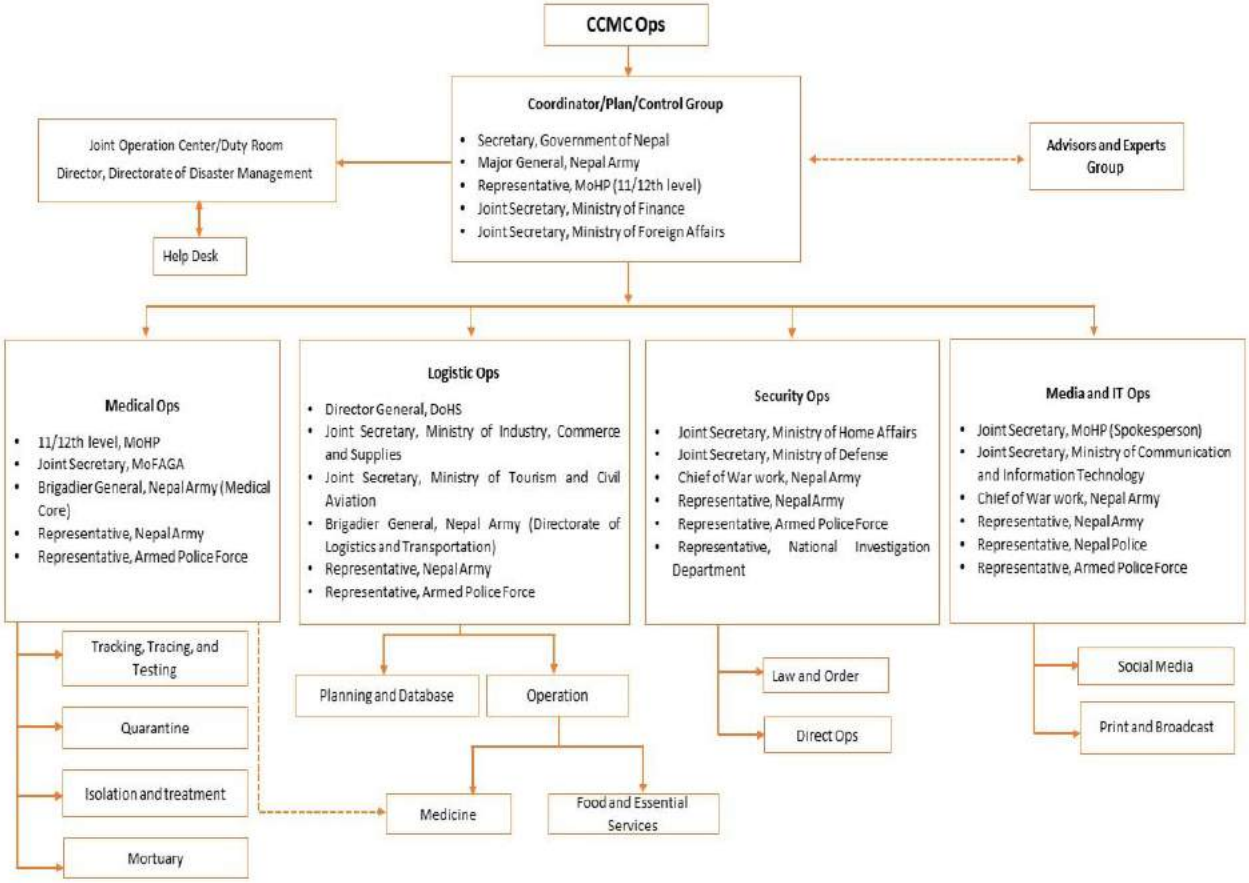


Figure. Structure of CCMC at federal level

Annex 3: List of policy documents

SN	Name of policy document/guidelines	Published date	Lead organization	Source/URL
1	Key actions to be taken for COVID-19 infection	2020-03-15	MoHP	http://edcd.gov.np/news/download/key-actions-to-be-taken-for-ncov-infection
2	COVID-19 Patient Transport Team (PTT) guidelinef	2020 (2076)	MoHP	https://drive.google.com/file/d/1GLzSSLS_z8m-kZTeXoD3uaB6PcqbefJT/view
3	Guidelines for operation and management of quarantine	2020-03-26	MOFAGA	https://mofaga.gov.np/news-notice/1803
4	Management of health services for people in quarantine	2020-05-20	MoHP	https://drive.google.com/file/d/1sPN4lM2AMefmpFjZQ9TH1vFgNgJuftJv/view
5	Health sector emergency response plan	2020-05-09	MoHP	https://drive.google.com/file/d/1Jrg02HTqN-q8KkUESCne35GreQOL199h/view
6	Use of PPE during care of patients (guideline)	2020-03-26	GoNl with reference from WHO	https://drive.google.com/file/d/1WAG7Ruhk32zpa2R-oZxDQRgTzRE959Wk/view
7	Safety measures to be followed at the point of entry (import) in the context of COVID-19 pandemic		MoHP	https://drive.google.com/file/d/1Prz1sPcQv04O9ToqlWkTsf7txsnROhNo/view
8	COVID-19 Health Desk Operation Guideline MoSD, Sudurpaschim Province	2020 (2076)	MoSD, Sudupaschim Province	https://www.publichealthupdate.com/covid-19-health-desk-operation-guideline/
9	Direction to facilitate the repatriation of Nepali citizens who have to return home due to the uncomfortable situation caused by the global infection of COVID-19, 2077	2020-05-18	MOFAGA	https://mofaga.gov.np/news-notice/1872
10	Instant hand sanitizer (alcohol based) standard 2076	2020-04-28	MoHP/Department of Drug Administration	https://www.publichealthupdate.com/instant-hand-sanitizer-alcohol-based-standard-2076/
11	Environmental cleaning and disinfection	2020-06-17	MoHP	https://drive.google.com/file/d/1ux1Vm6ps9ZnbUp3nB6BqgYhNjvatFn__/view
12	Standard Operating Procedure (SOP) of cleaning and decontamination of the ambulance used in COVID-19		MoHP	https://drive.google.com/file/d/1KAv-TkbYe8Ib-DxEundiN8EVeb1A9YzH/view
13	Standard Operating Procedures for Infection prevention and control practices in COVID-19 testing laboratories		NPHL	https://www.nphl.gov.np/uploads/IPC-converted.pdf

SN	Name of policy document/guidelines	Published date	Lead organization	Source/URL
14	Nepal Medical Council Interim Guidance for Infection Prevention and Control When COVID-19 is Suspected	2020-04-05	NMC	https://drive.google.com/file/d/1VzWcuQccAE0wmvjZgnGedicKFBXz7c21/view
15	Health Care Waste Management in the context of COVID-19 Emergency	2020-07-03	HEOC	https://drive.google.com/file/d/1Kcj0-zqjVMHQPAX4ocshrbhKqsAk11JU/view
16	Interim Clinical Guidance for Caring if Patients with COVID-19 in Healthcare Settings	2020-04-06	NMC	https://drive.google.com/file/d/1JT6rppO00I-l3aukPS3dYfc0IeaQLs-E/view
17	Clinical approach to a patient with suspected COVID-19		Not mentioned	https://drive.google.com/file/d/112-1rsAtXoVnojcz1LVyC8TfenuAelWV/view
18	Case Investigation and Contact Tracing Team (CICTT) Mobilization Guideline 2077	5/12/2020 (Approved on: 2020-6-10)	MoHP	https://drive.google.com/file/d/1j8YIHFsqvhiuh9iyty5hITCjLcibU7ew/view
19	Staff Mobilization Guideline	2020-05-15	MoHP	https://drive.google.com/file/d/1GavLiOpTqgDYTxsr_vY8jFLLtKrj_gzZ/view
20	COVID-19 emergency medical deployment teams (EMDT) mobilization guidelines	2020-05-28	MoHP	https://drive.google.com/file/d/1Ox84pbpoHLSv7naM_0QHCNnS_B1nEHwX/view
21	Guidelines for volunteer mobilization in the community for the prevention and control of the Corona pandemic -2076	2020-04-07	MoHA	http://www.moha.gov.np/post/guidelines-for-volunteer-mobilization-in-the-community-for-the-prevention-and-co
22	COVID-19 Cases Isolation Management Guidelines	2020-06-03	MoHP	https://www.publichealthupdate.com/covid-19-cases-isolation-management-guideline/
23	Health Standards for COVID-19 Infected in Isolation, 2077	2020-06-29	HEOC	https://drive.google.com/file/d/1igGRp3ZHY9tOEMakob4nZL_DbFYO9n2N/view
24	Interim Guidance for RMNCH services in COVID 19 Pandemic	2020-05-21	Family welfare Divison/MoHP	https://drive.google.com/file/d/1mZF6s5YY5KSZFBFHVASJuZGwjNm7eHYk/view
25	Guideline for the operation of Nutrition Rehabilitation	2020-06-22	MoHP	https://drive.google.com/file/d/1V5FRhbaTrcd1oE_Bf48FO7wII8UHjqY5/view
26	Clinical Guideline for Physiotherapy treatment in patients with COVID 19 in acute hospital settings	2020-06	Nepal Physiotherapy Association (NEPTA)	https://www.publichealthupdate.com/clinical-guideline-for-physiotherapy-treatment-in-patients-with-covid-19-in-acute-hospital-settings/
27	Interim guidelines regarding flow of essential health including rehabilitation services for people with disability during COVID-19 epidemic 2077	2020-06-29	MoHP, EDCD, Leprosy Control and Disability Management Section.	https://drive.google.com/file/d/1-th4Y2tlPVtT6CMie1P-HsIlsBKlxx7w/view

SN	Name of policy document/guidelines	Published date	Lead organization	Source/URL
28	SOP for case investigation and contact tracing of COVID-19	2020-03-21	MoHP, EDCD	https://drive.google.com/file/d/1X_xo6Pgc8DLEJ97OAH3aF0pavBAwhmvV/view
29	Brief procedure on management of bodies of COVID-19 deceased-2076 (First REVISED 2077, Approved date: 2077/02/20)	2020-06-02	MoHP	https://drive.google.com/file/d/1dbTpfm5aysdY9utUcOXLEbuZ-VUxQ5y5/view
30	Directions on grants provision to hospital providing treatment for COVID-19 infection, 2077	2020 (2077)	MoHP	https://drive.google.com/file/d/1fz92OcgbM_KvuSKV9_05QC7_GlNzZ9Uh/view
31	Directions on management of risk allowance to human resources engaged in treatment of COVID-19 infection -2077	2020 (2077)	MoHP	https://drive.google.com/file/d/1VL8ItXlTGEWMk0BYGZMM7ynfKAqvZp1G/view
32	Directions made to amend directions on grants provision to hospital providing treatment for COVID-19 infection, 2077	2020-06-29	HEOC	https://drive.google.com/file/d/1Les4fw4GvPvqrrX8_eFIo1qNJoTKDt7u/view
33	Standard protocol on the mobilization of non-military aircraft for COVID-19 management		COVID-19 crisis management center (CCMC)	https://drive.google.com/file/d/1RDlcsnFgn3uJUkA70WoRwtw9imfmgMnr/view
34	Interim guideline for the establishment and operationalization of molecular laboratory for COVID-19 testing in Nepal	2020-04-27	MoHP	https://drive.google.com/file/d/157Q7JK3rFTgQRFk3DCuVpw_-owRCBI65/view
35	National testing Guidelines for COVID-19	Approved on: 2020-06-02	MoHP	https://www.publichealthupdate.com/national-testing-guidelines-for-covid-19/
36	Guideline on PCR test Private lab	2020-06-22	MoHP	https://drive.google.com/file/d/19cz5jXvV_8lutCV3ktYEjEGtPl1FbpDK/view
37	Updated Testing guidelines for COVID-19	2020-04-26	MoHP, EDCD	http://edcd.gov.np/resources/download/testing-guideline-for-covid-19-updated
38	Guideline for RDT Test Authorization to Private and Community Hospitals	2020-05-15	MoHP	https://www.publichealthupdate.com/guideline-for-rdt-test-authorization-to-private-and-community-hospitals/
39	Sample collection and packaging for COVID-19/ SARS-COV-2 PCR testing (SOP)	2020-04-15	NPHL	https://drive.google.com/drive/folders/1ZeHZ2Agduj4IRYhrFAhXQYA6P3RHL45G
40	General sample reception and transport for COVID-19 (SOP)	2020-04-15	NPHL	https://drive.google.com/drive/folders/1ZeHZ2Agduj4IRYhrFAhXQYA6P3RHL45G
41	Regarding adherence to one door system for distribution of	2020-04-03	MOFAGA	https://mofaga.gov.np/news-notice/1809

SN	Name of policy document/guidelines	Published date	Lead organization	Source/URL
	relief packages (To all local levels)			
42	Introduction to Novel Corona Virus Disease (COVID-19) (Handbook for health workers)	2020-03-15	MoHP, NHTC	https://drive.google.com/file/d/12diz__W0rIdI_GARq16AiyWSQsqWEZww/view
43	Interim guideline on delivery of COVID and other health care services in the context of COVID-19 epidemic - 2076	2020 (2076)	MoHP	https://drive.google.com/file/d/1kzWQTtyi2cz8HSA4Hwv3zjdHwExJQXhO/view
44	Protocol for operating COVID-19 Clinic		MoHP	https://drive.google.com/file/d/1Za2neBknVzoumvR5K127fGdz6oeyrz28/view
45	Regarding Essential Management for Coronavirus (COVID-19) Preparedness and Response (To all local levels)	2020-03-22	MOFAGA	https://mofaga.gov.np/news-notice/1795
46	Regarding implementation of decision of Government of Nepal (To all local levels)	2020-04-01	MOFAGA	https://mofaga.gov.np/news-notice/1806
47	Quick Need Assessment and Recovery Strategy Framework for Local Government	2020 (2077)	MOFAGA	https://www.publichealthupdate.com/quick-need-assessment-and-recovery-strategy-framework-for-local-government/
48	Directions on operation of COVID-19 Unified Hospital, 2077	2020 (2077)	MoHP	https://drive.google.com/file/d/1yEvXHgT3oxt0Y3NIsmEvQOetltFc7-3A/view
49	Security standards for managing lockdown, 2077	2020-06-19	MoHA	https://www.moha.gov.np/post/lockdown-security-standards-2077
50	To make necessary preparations by adopting high vigilance in prevention and control of COVID-19 (To Chief Administrative Officers of all rural and urban municipalities)	2020-03-25	MOFAGA	https://mofaga.gov.np/news-notice/1802
51	Regarding effective prevention and control of COVID-19 (To Chief Administrative Officers of all local levels)	2020-04-07	MOFAGA	https://mofaga.gov.np/news-notice/1818
52	Guideline for Logistics support	2020-06-05	MoHP	https://drive.google.com/file/d/1j4HXkyuKmzl8Uaj8u5Y-Y0GvsZu1vIx3/view
53	National Testing Guidelines for COVID-19	2020-07-29	MoHP	https://drive.google.com/file/d/1dalK3C9ECgiKpztEwfQ_5aCRpbLJQqLR/view
54	Guideline for home quarantine	2020-07-24	MoHP	https://drive.google.com/file/d/1W34BbBTqr1g7Hzwut5JhuwtjZLkKAXHp/view

SN	Name of policy document/guidelines	Published date	Lead organization	Source/URL
55	Guidelines for the management of health workers and other staff directly involved in the treatment of COVID-19 patients, 2077 (First Amendment)	2020-06-23	MoHP	https://drive.google.com/file/d/1O92dsY-0NJpyBujB2rEGympqV7JGILmZ/view
56	Air lifting standards for COVID-19 patients, 2077	2020-10-01	MoHP	https://drive.google.com/file/d/13o2uP67Y05UfvTOuZUI9MT3A1h_yuXMo/view
57	National Testing Guideline for COVID-19 (5th Revision)	2020-10-13	MoHP	https://drive.google.com/file/d/1To0nfDp5SKA1sTW0AfAcgzJHLmhl7yA1/view
58	Brief procedure on management of bodies of COVID-19 deceased-2076 (Second Revision)	2020-10-11	MoHP	https://drive.google.com/file/d/1kU_EZ3AYg0dWwODiCPE9iPw83duj4xST/view
59	Guidelines for bodies of COVID-19 deceased	2020-04-08	MoHP	https://drive.google.com/file/d/1ENGIDUd_qlxuoTp44VTsMiileaC0q0LW/view
60	Pocket Book for Infection Prevention and Control Measures for COVID-19 in the Healthcare Setting	2020-05-12	MoHP	https://drive.google.com/file/d/1qCKEq0CqDeGQTyKU_EwVkyrf5X9M80X8/view
61	Pocket book of clinical management of covid-19 in healthcare settings	2020-04-23	MoHP, EDCD	http://edcd.gov.np/resources/download/pocket-book-of-clinical-management-of-covid-19-in-healthcare-setting
62	Guidelines regarding availability of isolation kits for infected individuals living in home isolation	2020-11-22	MoHP	https://drive.google.com/file/d/1HcOJ3rx41tYGzXuSObgO5LfKGDz6D5kR/view
63	Guidelines for Mobilization of COVID Facilitation Group at the Community Level	2020-11-22	MoHP	https://drive.google.com/file/d/1L4SmmCha-Fzm8FZl9dsJGcDHdX_q-Frd/view
64	Standards regarding operation of shelter home during Corona Virus (COVID-19) pandemic (To all local levels)	2020-06-25	MOFAGA	https://mofaga.gov.np/news-notice/1915

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