

Challenges in Providing Health Care Services During COVID-19 Pandemic: Exploration of Providers' Perspectives in Nepal.

Rajendra Karkee (✉ rkarkee@gmail.com)

B. P. Koirala Institute of Health Sciences <https://orcid.org/0000-0003-1510-5457>

Prajwal Pyakurel

BP Koirala Institute of Health Sciences

Deepak Paudel

BP Koirala Institute of Health Sciences

Parineeta Thapa

BP Koirala Institute of Health Sciences

Jiba Nath Dhamala

Koshi Hospital

Bishnu Pokharel

BP Koirala Institute of Health Sciences

Research

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Abstract

Introduction

The rapid increase of COVID-19 cases since the beginning of May 2020, imposition of lockdown, and preparation activities to detect, manage and treat COVID-19 in public hospitals have impacted on the provision of non-COVID health care services resulting in increased morbidity and mortality in Nepal. This study aims to explore challenges in providing non-COVID as well as COVID-19 health care services through public hospitals in Eastern Nepal.

Methods

A qualitative study with 25 key informants from three public hospitals in Eastern Nepal was conducted. Key informants were health care workers (HCWs) and managers of the hospitals. A thematic analysis was carried out to identify challenges in providing non-COVID and COVID-19 health care services.

Results

We identified four themes: weak implementation; weak co-ordination and management; low accountability of HCWs and staff; and risk of infection and stigma as the challenges to provide COVID-19 health care services. We identified three themes: maintaining safety measures in hospitals, managing patients, and fear of infection as the challenges in provision of non-COVID health care services. Inadequate resources and HCWs, lengthy procurement process, and poor jobs specification were the main reasons for weak implementation. HCWs stated weak hospital administration while managers and focal persons complained of low accountability of HCWs and staff to manage COVID-19 health care services.

Conclusion

In addition to inadequate resources; the risk of infection of COVID-19, maintaining safety measures in hospitals, ensuring clear leadership and governance, and preparing motivated and accountable HCWs and staff to get 'work done' are unique challenges observed in the study hospitals; and consequently need to be addressed.

Introduction

The corona virus disease 2019 (COVID-19) was declared global pandemic on March 11, 2020 by World Health Organisation (WHO) after being first reported to the WHO China Country Office at the end of 2019 as pneumonia of unknown cause from the city of Wuhan in Hubei province, China (1). Since then, as of September 15, 2020, there are 21.2 million cases with 761000 deaths reported from 216 countries/areas/territories of the world (2). The first case of Covid-19 in Nepal was a Nepali student of Wuhan University of Technology, who was admitted to the Sukraraj Tropical and Infectious Diseases Hospital, Kathamandu, with mild symptoms after returning to Nepal on 13 January, 2020 (3). The second case of COVID-19 was detected on March 23, 2020 two months later.

Despite low COVID-19 cases, Nepal was declared as a high risk country by WHO on March 24, 2020 owing to its proximity to China and India. In addition, Nepalese migrant workers in several countries including India, Gulf Council Countries (GCC), Malaysia, and Korea where the disease was already increasing, were expected to return to Nepal. The COVID-19 cases began to rise in Nepal from the beginning of May 2020 (102 positive cases in 8th May 2020) corresponding to the rise of cases in neighbouring India.. Nepal had imposed an early national lockdown as a preventive approach from March 21 (with only two cases reported) to June 14, 2020. On the last day of the national lockdown, there were 5760 cases and 19 deaths with transmission stage reported as a cluster of cases. Public gatherings and movement of people were restricted in the national lockdown with closures of all domestic and international flights and borders. The outpatient departments (OPDs) of public hospitals remained closed with the instructions to prepare for COVID-19 from the Ministry of Health during the national lockdown (4). The public hospitals started preparation activities to detect, manage and treat COVID-19 by establishing fever clinics, isolation wards and COVID hospitals. Despite these measures, COVID-19 cases have been rapidly increasing in Nepal ever since, and as of October 3, 2020, there were 84570 cases with 528 COVID-related deaths (5).

The national lockdown and preparedness activities have been impressive, however, they have impacted on provision of non-COVID health care services throughout public hospitals in Nepal, resulting in increased morbidity and mortality in patients needing treatment (6). There are a number of reasons for this. Patients are reluctant to seek health care because of fear of COVID-19 infection and closure of public transports unless there is an emergency. Even if patients attended, prompt treatment and/or health screening were hampered due to closure of OPDs, denial of treatment, and delay in treatment due to lack of available staff and multiple referrals from one health facility to other. There is evidence of increased mortality of both chronic and acute patients. Maternal mortality has increased and people with long term kidney and heart diseases, have died due to the lack of timely treatment and management in Nepal (7, 8). Post lockdown has seen some improvements, however, hospital services have been intermittently disrupted in hospitals when health care workers (HCWs) get infected. The inability to access health care services raises moral and ethical questions for people in need (9, 10). In addition, people in the lowest income groups and those who live in slums are more affected by the risk of COVID-19 and by the lack of available health services (11).

Nepal is not alone as most health systems globally are facing challenges to provide both COVID-19 and non-COVID health care services (12–14). However, the challenges vary between countries owing to differences in health system resources and resilience, social systems and behaviours, and the extent of the pandemic (15). In this context, the aim of this study was to explore challenges in providing COVID-19 health care services and non-COVID outpatients and emergency health care services in Eastern Nepal. The findings are expected to reveal the unique challenges and experiences faced by hospitals in a low resource setting and to recommend effective strategies for hospital preparedness and health care provisions during the ongoing and any future health crisis.

Methods

Study hospitals and design

A qualitative study using key informant interviews was designed. The government of Nepal categorised selected hospitals based on their capacity and infrastructures into Level 1, Level 2, and Level 3 COVID hospitals designating to treat mild, moderate or severe, and severe or multispecialty COVID-19 cases respectively (16). Three hospitals in province 1 of Eastern Nepal were selected; one was designated as Level 1, and the other two Level 2 and 3 respectively. These hospitals are public, and provide health care services mainly for low-and middle-income population in the Eastern region of Nepal. Level 1 hospital is 15 bedded public district hospital with an average of 150 outpatients flow per month; Level 2 hospital is 350 bedded public regional hospital with an average 18000 outpatient flow per month; and Level 3 is 700 bedded public teaching hospital with an average of 30,000 outpatients flow before COVID-19 pandemic. The emergency department of level 3 hospital has over 100 HCWs with an average of 4000 patients admitted monthly before the COVID-19 pandemic. Level 1 hospital admitted 21 COVID-19 cases with no deaths as of September 18, 2020; Level 2 hospital admitted 550 COVID-19 cases with 13 deaths as of October 8, 2020; and Level 3 hospital admitted 855 COVID-19 cases with 42 deaths as of October 8, 2020.

Permissions were sought from all three hospitals and an ethical approval for this research was obtained from the Institutional Review Committee of B. P. Koirala Institute of Health Sciences, Dharan, Nepal. The study objectives, voluntary nature and confidentiality of the study were explained to participants, and verbal informed consent was obtained before each interview. Confidentiality was assured by using numbers and removing identifying information from the transcripts. All transcripts were strictly protected and were not shared out of the research team. We followed the Standards for Reporting Qualitative Research guidelines (COREQ).

Data collection tool and procedure

A total of 25 key informants were selected from the three study hospitals. Key informants were health care workers (HCWs) who were involved in providing non-COVID related health care services in outpatient and emergency services (n=9) and COVID-19 related health care services in isolation wards and COVID hospitals (n=9), focal persons responsible for co-ordinating COVID-19 health care services (n=3) and managers (n=4) (Table 1). The HCWs in this study include only physicians and health staff in this study refers to the non-clinical staff employed by the hospitals whose work support the delivery of health services including cleaning, catering, security, and other logistics. We selected participants purposively but based on involvement and experience, which was greatly enhanced by our own involvement and familiarity with the study hospitals.

Table 1
Characteristics of key informants (n=25)

Key informants	Number (n)			Total
	Level 3	Level 2	Level 1	
Health care workers involved in COVID-19 health care services (HCW-C)	5	3	1	9
Health care workers involved in non-COVID outpatients and emergency services (HCW-NC)	4	3	2	9
Managers (M)	2	1	1	4
Focal persons of COVID hospitals(FP)	2	1	-	3
Total	13	8	4	25

We prepared a semi-structured key informant interview guide in Nepali language. This guide sought information related to challenges in providing non-COVID OPD services and in COVID-related health care services. The interview guide was prepared based on resources including WHO's hospital preparedness (17) and pre-tested on three participants for clarity and objectives correspondence. Interviews were conducted between August 1 and August 15, 2020 with prior appointment by face to face (n=16) as well as online (n=9), and recorded on smart phones. Interviews lasted an average 20 minutes. Only one participant approached refused to be interviewed. The interviews were transcribed into Nepali language manually immediately after the interviews and during transcription, we met to identify and discuss evolving codes and patterns of the challenges to provide COVID-19 and non-COVID health care services. The analysis was done in Nepali language and only the final categories, themes and quotes were translated into English.

Data Analysis

We proceeded to identify themes related to the research questions: challenges in providing outpatient and emergency services, and COVID-19 related health care services. The transcripts were read and reread to understand the meaning, and coded for important issues with extraction of key informants' view (quotations) according to the principles of thematic analysis (18). The codes were analysed to identify categories and themes. Initially, the coding was done by three of the authors, and later discussed and verified by all authors. Coding and patterns identification were all done manually, highlighting the important sentences and phrases. During the coding and pattern identification, all authors discussed and chose the highlighted quotations. All quotations were translated into English by RK and back translated by BP. The identification of patterns and interpretation of themes were greatly enhanced by authors being local and working in the study hospitals. After a first draft of identification of categories and themes, we further took two interviews, one with HCW involved in COVID-19 health care service and another with HCW providing outpatients services to confirm the data saturation. No new codes or categories were identified.

Results

Hospitals preparedness for COVID-19 services

Level 1 hospital started preparation activities by establishing a fever clinic and converting some of the general wards to isolation wards. Its outpatient services were closed between 18th May to 23th May 2020 owing to infection to HCWs. Level 2 hospital started preparation activities by establishing fever clinic, hand washing stations within hospital and converting some of the general wards into isolation wards. Personal protective equipments (PPE) were made locally. A separate COVID hospital was prepared by renovating an existing old government building in collaboration with the provincial government. The renovation took approximately a month to complete with 8 intensive care unit (ICU) beds and 6 ventilators. Level 3 hospitals started preparation activities by establishing fever clinics, rapid response team (RRT), and converting some of its general wards into isolation wards. A separate full capacity 100-bedded COVID hospital was prepared by renovating an existing building originally used for rehabilitation purpose. The renovating work started in April 24, 2020 and finished in August 11, 2020.

Challenges in providing COVID services

Table 2 shows the themes and categories of challenges. The implicit remark inherent in the interviews was that 'work not being done' during the preparedness and COVID-related health care service provision. On further analysis of this phenomenon, we identified four enforcing themes: weak implementation; weak co-ordination and management; low accountability of HCWs and staff; and risk of infection and stigma.

Table 2

Categories and themes for challenges in providing health care services during COVID-19 pandemic in Nepal, 2020.

COVID-19 health care services		Outpatients and emergency services	
Themes	Categories	Themes	Categories
Weak implementation		Maintaining safety measures in hospitals	Patients not following safety guidelines: social distancing and mask
	Inadequate resources and HCWs		Inadequate and poor quality PPE
	Lengthy procurement process		Congested workplaces
	Poor jobs specification		
Weak co-ordination and management		Managing patients	Low health literacy among patients
	Indifferent hospital administration		Online and prior appointment system not practical
	Poor chain of command in preparedness and service provision		Screening for COVID and triage managements
	Unfair performance recognition		
Low accountability of HCWs and staff	Shifting work to juniors		
	Failure to do or avoiding one's duty	Fear of infection	Fear of COVID infection during patient-physicians interaction
Risk of infection and stigma			
	Being infected and infecting others		
	Insufficient PPE and poor quality PPE		
	Stigma		

Weak implementation

Three reasons were identified for weak implementation: inadequate resources and HCWs; lengthy procurement processes for essential equipment; and poor job/role specification. The hospitals did not have additional wards or buildings for management of COVID-19 health

services including separate fever clinics, sample collection centers, and laboratory facilities. Some of the existing outpatient and inpatient wards were turned to isolation wards with duty roster including existing HCWs. Managers were concerned about the cost of providing PPEs and extra HCWs. The existing pool of HCWs were not sufficient to provide both COVID-10 and non-COVID health care services.

“There is very much financial burden to hospital due to resources divide to run COVID-19 and non-COVID health care services and to purchase PPEs” M1

“First PPEs are not sufficient, next the distribution of N-95 mask was not fair.” FP2

“We demanded additional nurses for COVID-19 health care services but not listened from the administration, and we had to divide the nurses between non-COVID and COVID health care services.” M2

Existing buildings for other purposes were upgraded to make ‘COVID hospitals’ but completion of such hospitals took considerable time. The procurement of logistic materials and equipments was delayed due to lengthy procurement processes; and vested interests of undue advantages. Such hospitals had to run without basic equipments and amenities including oxygen plant, internet, adequate bathroom and toilets for the COVID-19 patients admitted. COVID-19 patients complained regarding these logistic issues which had to be faced by the frontline HCWs, though these were related to logistic personnel.

“There is weak chain of command on COVID hospital preparedness...the preparation is so late, at the end the hospital have to run without basic amenities set up like oxygen supply management.” HCW-C-3

Asymptomatic and symptomatic, new and old patients are kept together, often in the same room... bathroom and toilet facilities are very poor one bathroom and toilet need to be shared by fourteen people.

HCW-C-1

“At the beginning, we (HCWs) have more logistic problems to manage than the medical services for COVID-19 patients.”HCW-C-2

Weak co-ordination and management

The HCWs and focal persons involved in COVID-19 health care services frequently stated about the indifference of hospital administration in rapid decision making, co-ordination and actions with regard to the preparedness for COVID-19 health care service provision. They felt that there were poor chains of commands over implementation and duty enforcement. They complained that there was not a fair recognition and reward for performance and work resulting in less motivation to work in this challenging time. They stated that hospital administration failed to consult expert advice and that the rapid response team (RRT) was not fully authorised in financial and managerial decisions affecting rapid

implementation of preparedness and service provision. Focal persons felt that there was much talk in RRT meeting but fewer actions, exhibiting a lack of effective teamwork and motivation.

“Leadership in the hospital should give sufficient time, understand the seriousness of the problem and most importantly, work with integrity and proactively.”FP1

“Often, I feel that the managerial authorities in our work culture and political system have various interests and purposes other than for what they have been appointed in the posts.”FP2

“We have a general culture of getting reward and appointments without skills and contributions, and getting the same salary irrespective of work load, so some HCWs began avoiding to work on COVID duty.”FP2

“In RRT (rapid response team), there are many members, much talk and discussions but no implementation at the end, mainly due to lack of support from the hospital administration.” FP1

A lack of supervision and passive administration meant poor communication and co-ordination among different sections and specialities including laboratory and radiology services within the study hospitals. The changing scenario and guidelines for COVID management posed difficulty in adaptation. Further, the focal persons and managers perceived that the co-ordination between federal, provincial and local level governments was not effective, with federal guidelines and directives not strictly followed by lower level and lower level concerns not listened to by the federal level.

“The guidelines are frequently changing, and those guidelines from central level often not followed at the provincial level.” FP1

“At the beginning none took it seriously and only after more spreading/cases, they made RRT a bit more powerful giving authority.”FP2

“There is a communication gap between the government and local level for the management of the COVID patients.” M3

“A group of 27 COVID-19 positive persons from a district was sent to be kept in isolation wards in this hospital but they had to wait outside the isolation ward for more than 9 hours.” HCW-C-4

Low accountability of HCWs and staff

Managers and focal persons worried that there was a lack of commitment among staff and HCWs on ‘this is my duty’ in this pandemic context. Logistic staff failed to do the work assigned in COVID hospitals and isolation wards. Senior HCWs tried to avoid duty on COVID wards and hospitals, shifting or instructing junior HCWs and/or residents to work in these areas. Newly hired junior HCWs and resident doctors were mostly on the front lines of COVID-19 health care services in the study hospitals.

"In the COVID-19 treating team, most HCWs are unexperienced fresh graduates, with no experience of ICU and emergency" HCW-C-3

"If some things like electricity, phone, internet does not work in isolation wards or COVID hospitals, logistic staff do not come to repair on repeated calling." FP1

"Even when there is PPE, some HCWs are reluctant to work in COVID hospitals" FP2

"I was offered a job but for COVID-19 services, which I did not know when applying."HCW-C-1

Risk of infection and stigma

HCWs involved in COVID-19 health care services stated their fear and anxiety because of risk of infection to them and to their family, the uncertainty of pathogenicity and treatment outcomes of the COVID-19. They stated that risk of infection increases with poor quality PPE, improper donning and doffing, lack of proper training on the use of PPE, and due to the behaviour of some patients, especially those who are psychologically disturbed. HCWs perceived that government supplied and donated PPE were not of good quality. HCWs also mentioned the discomfort in wearing PPE for a long period, which they had no prior experience of. They also faced social stigma during interaction, accommodation, and movement. With such obstacles, they were reluctant to have duty on COVID-19 ward or hospitals.

"We are tense and stressed until our PCR report comes."HCW-C-7

"Some patients are psychologically disturbed, I am always afraid if they quarrelled or touched me...it is difficult to counsel them" HCW-C-2

"I am always concerned how properly the lower level staff (sanitation workers) follow the safety measures." HCW-C-5

"Even my regular non-COVID patients did not come for follow up check up when I worked in COVID hospital" HCW-C-3

Challenges in providing outpatient and emergency services

We identified three themes of challenges in provision of outpatient and emergency health care services: maintaining safety measures in hospitals, managing patients, and fear of infection.

Maintaining safety measures in hospitals

Being public hospitals, the three study hospitals are the main health service providers for the general population in Eastern Nepal. Even in the time of lockdown, patients came to get check-ups in OPDs which had limited open spaces for waiting. Patients were not following the safety guidelines including social distancing and wearing masks, which increased the chances of infection among themselves and to HCWs. Further, the quantity and quality of PPE was not adequate. It was a huge burden for hospitals to maintain a continuous supply of PPE and manage other physical resources.

“When there is not quality PPE and risk of infection, HCWs are not motivated to check patients.”FP2

“There is always queue of patients waiting for registration and to be checked up by doctors...we have provided extra security guards to maintain queue and social distancing...however, many times it was not followed by the patients.” M1

Managing patients

The majority of patients coming to these public hospitals are from low socio-economic background and have low health literacy. Online registration, prior appointment and online counselling are recognised strategies during this pandemic but implementation of these methods is challenging in these hospitals. Screening of all patients seeking outpatient and emergency services, segregation of COVID-19 symptomatic patients, prioritising the severe patients were challenging.

“I thought of starting online patient registration for OPD services but it was not materialised because of patients’ literacy and accessibility.” M1

“In our hospital environment, many patients visit OPD, all are in hurry to check up and return to their homes, rules like social distancing are not followed.” HCW-NC-3

“A pregnant diabetic woman had to wait for the OPD ticket for more than 72 hours.”HCW-NC-2

Fear of infection

Physicians stated the precautions they took. There was not sufficient quantity of PPE among HCWs involved in non-COVID health care services in outpatients and emergency services because limited PPE were prioritised to HCWs involved in COVID-19 health care services. Since there was no effective screening and segregation of symptomatic patients and patients not following safety guidelines, the physicians were fearful of close examination and interaction. In lack of rapid confirmation of patients’ COVID-19 status and isolation spaces, treatments were delayed resulting deaths in severe cases.

We took all precautions. We used face mask, goggles, surgical gown, and face shield in OPD. We tried to maintain 1 meter distance with patients in OPD. HCW-NC-5

“One of patients coming to emergency department died while waiting for PCR report.” HCW-NC-4

“We wanted to treat a suspected COVID patient coming to emergency department from an outbreak area in the isolation ward. But there was a death of another suspected case in the isolation ward. We could not immediately take the patient to the isolation ward and by the time we were making alternative arrangements, the patient collapsed. His PCR report later came to be negative.” HCW-NC-3

Discussion

In this study, we explored the challenges in providing health care services in Nepal during the COVID pandemic. Challenges to provide COVID-19 health care services included insufficient implementation or

preparedness; indifferent and ineffective administration; low accountability of health care workers and staff; and risk of infection and stigma. Challenges to provide routine outpatients and emergency services include maintaining safety measures in hospitals; managing patients for registration, screening and triage; and fear of infection during patient-physician interaction. These are characteristic of non-resilient health systems which have a poor foundations of strong local and national leadership, of a committed health workforce, and of sufficient infrastructure (19, 20). Clearly, this makes it challenging to withstand a health crisis such as COVID-19, particularly in low income countries (21). There is a need for clear leadership and governance, promoting public trust and investment for the timely and co-ordinated response to COVID-19 as exemplified by many countries including Vietnam, South Korea and Singapore (22–24).

Being a new rapidly evolving contagious disease, health systems worldwide are facing challenges to manage infrastructure, dedicated human resources and adequate supplies to treat COVID-19 patients (25, 26). These challenges are more substantial in settings where there is a weak health system characterised by inadequate infrastructure, and availability of equipment and HCWs (27). Nepal's health system is already constrained by the lack of HCWs, infrastructure, amenities and equipment, and poor management even before COVID-19 with compromised quality of care (28), which has further deteriorated during this pandemic. Nepal moved to federalism since 2015 with significant devolution of power and resources from central government to provincial and local authorities (municipalities) including health system reformation. This has shifted the primary responsibility for health service provision to provincial governments and municipalities but has met a number of implementation challenges including unclear roles and responsibilities among the three tiers of governance in decision making, and in human and financial resources management (29, 30). This has resulted in poor co-ordination among the three tiers of governance affecting effective response to this pandemic. Overall, health system resiliency is greatly affected by the socio-political environment, for example 'governance' and 'values, beliefs and preferences of the actors within a health system' are fundamental functions affecting the core dimensions of health systems' ability to adapt and respond to shocks (31).

Rapid purchase of materials and equipment for COVID-19 preparedness was affected by the lengthy administrative procurement process. The procurement process in Nepal involves stepwise processes and vested interests with reported corruption, mismanagement, purchase of poor quality materials and late arrivals of materials (32). This had an immense impact on preparedness of COVID hospitals and management activities in Nepal resulting in the late availability of COVID facilities and isolation wards. The COVID hospitals in this study had to run without the prerequisite as in the guidelines and set criteria, and this has resulted in inadequate provision of COVID-19 related health care services. Such weakness and inability of health systems to cope with the Ebola epidemic was observed in Guinea, Liberia and Sierra Leone in 2014 (33). Lower resiliency of public health systems in the COVID-19 response have been observed in other low-and-middle-income Asian countries (14, 34).

The efficient use of available human and material resources were challenging due to indifferent and weak hospital administration. On one hand, hospital administration was weak in implementing duty rosters,

and on the other hand, there was low accountability on the part of HCWs and health staff to perform their assigned duties in this pandemic. This is very different from the findings that health-care providers volunteered and tried their best to provide care for COVID-19 patients in Hubei province, China (35). The COVID patients in the COVID hospitals and isolation wards complained about the poor management of logistics including food, bathroom, and internet to the HCWs while these logistics were supposed to be managed by health staff and/or hospital administration. This has affected the work efficiency of HCWs and showed poor accountability on the part of health staff.

During pandemics, the accountability of HCWs and health staff can be lowered due to fear of infection and infecting others, prevailing stigma and weak supervision. Effective team work, communication and supervision are lacking in the management of hospitals in Nepal (36). Hospital administration had to hire inexperienced HCWs or use resident doctors in the frontline, who had no experience of infectious diseases management. Yet the service of these frontline health workers was vital for these hospitals. Overall, the low accountability and weak supervision is partly due to prevailing socio-political environment and work culture in the country including in public health care facilities in Nepal (37).

The hospitals in this study are the main health service providers with a wide coverage in Eastern Nepal, mainly for low- and middle-income populations. During COVID-19 pandemic when the lockdown was lifted intermittently, there were considerable health care seekers visiting these hospitals. Maintaining basic infection-prevention measures to minimise risk of COVID-19 infection and spread were the main challenges during provision of outpatients and emergency services in this study. Regular supply of quality and adequate PPE to HCWs involved in non-COVID care is also challenging for the hospital administration. Having allocated specific spaces and wards to COVID-19 care, the hospitals were constrained in maintaining adequate service locations for regular health care services; thus, emergency services and outpatient clinics became congested. Infrastructural and infection control deficits at the lower health facilities were also reported in India in terms of limited physical space and queuing capacity, lack of separate entry and exit gates and inadequate ventilation (38).

The low level of health literacy among the majority of patients and time constraints of being checked and returning to homes in the same day further aggravated the safety measures of social distance while queuing for registration, check-up and laboratory diagnosis. Online registration, prior appointment and online counselling are a few ways suggested to lessen this problem (17), but challenging to implement in these hospitals because of poor accessibility of technology and awareness among patients.

Risk of infection and exhaustion is a unique challenge during this pandemic while providing health care services everywhere because of workplace risk to exposure of the virus (27). The infection prevention and control in outpatient settings of public hospitals of low-income countries during this pandemic were reported to be inadequate because of low compliance in hand hygiene, glove use, disinfection of reusable equipments, and in waste management procedures (39, 40). The adoption to work in this new infectious environment and wearing PPE for the first time is demanding for HCWs. Moreover, the fear and anxiety increases as the whole health system is constrained in the COVID-19 response and co-ordination

including supply of PPE. It might be the one reason of low accountability of HCWs to work in COVID wards and hospitals.

The epidemiology of COVID-19 is evolving and as yet is not predictive in outcome. A significant number of asymptomatic carriers are known only by PCR. Since patients with and without COVID-19 initially access health care in the same way, there is a huge challenge to establish an effective patient flow: screening, triage, and targeted referral in hospitals¹⁷. The screening and effective referral becomes more challenging for emergency patients, who need critical care, in the absence of immediate diagnosis of COVID-19, which can occur due to delayed PCR results. Further, practical co-ordinations among other units and departments are not effective. Similar management challenges of suspected and confirmed patients with COVID-19 has been faced by hospitals in France (41).

There are some strengths and limitations of this study. Some interviews were taken virtually where rapport building was difficult. The views of nurses and health staff, especially in COVID-19 health care services are important but not represented in this study. The non-COVID health care services were focussed on outpatient and emergency services while there are also peculiar challenges in inpatient and operative health care services. This study documented only challenges as perceived by health care providers. Resilient factors despite these challenges in providing health care services during COVID-19 pandemic and experiences of health service users are also important and need to be investigated.

Conclusions And Recommendations

HCWs stated weak hospital administration while managers and focal persons complained of low accountability of HCWs and health staff to manage COVID-19 health care services. Lengthy procurement processes for essential equipments, poor chain of command and low accountability of health staff affected timely response and care to COVID-19 health care services. Maintaining safety measures in congested outpatient departments during registration and check up, and providing emergency health services to patients with unknown COVID-19 status were additional challenges.

The findings have some important implications and recommendations for similar health crisis preparedness. Mostly, these implications indicate improvement in organisational and governance factors. First, only competent and visionary hospital administration can create a sense of solidarity and good teamwork in such a crisis. Monitoring and supervision are needed to maintain the chain of command and to ensure implementation of activities. Both hospital administration and HCWs need to be accountable to each other, and to the people they serve to ensure provision of quality health care services in a health crisis. HCWs need to be motivated and their concerns addressed, with transparent work division. Protecting HCWs by quality training and orientation in infection preventive measures and by ensuring adequate pool of quality PPE are necessary.

Second, co-ordination and communication within the hospital environment and with the outside stakeholders including provincial and local governments are crucial. RRT team need to be competent and

small consisting of multidisciplinary experts. Procurement processes for materials and equipments need to be streamlined and diagnostic facility including PCR need to be strengthened for rapid test result. Third, outpatient and emergency services management need improvement. A prior appointment system and management of waiting places can avoid crowd during registration and check-up. Emergency departments need adequate spaces and HCWs.

Fourth, hospitals need to have separate buildings and isolation wards to manage infectious disease outbreak; with speciality human resources. This will ensure that routine health care services need not to be dislocated; existing wards need not to be modified; and non-infectious and infectious patients are segregated. Moreover, separate infectious hospitals and centres need to be established in different regions of the country with the strengthening of epidemiology and infectious diseases expertise.

Abbreviations

COVID-19

Coronavirus Disease 2019

HCW

Health Care Worker

WHO

World Health Organisation

GCC

Gulf Council Countries

OPD

Outpatient Department

PPE

Personal Protective Equipments

ICU

Intensive Care Unit

RRT

Rapid Response Team

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from Institutional Review Committee of B. P. Koirala Institute of Health Sciences and written consent was taken from key informants prior to interviews.

Consent for publication

Consent for publication was obtained from key informants and from the employers (hospitals).

Availability of data and materials

Data is stored by the first author and are not publicly available. De-identified data can be made available from the first author

Competing interests

We declare that we do not have any competing interests.

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Authors' Contributions

RK and BP designed and set the objectives. RK prepared the research tool with feedback from all the other authors. PP, DP, PT and JD conducted interviews and transcribed the data. RK supervised the data analysis which involved all other authors. RK interpreted the data analysis and wrote the first draft of the manuscript. BP contributed to data interpretation and critically edited the manuscript. All authors read, commented and approved the final manuscript.

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