

TREND OF HOSPITAL CARE SERVICES DURING COVID-19 PANDEMIC IN A TERTIARY CARE HOSPITAL IN PROVINCE 5

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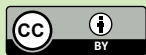
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**ABSTRACT**

Introduction: Health systems all around the globe have greatly been affected by the increasing demand for care of people with COVID-19. A well-prepared health system should have the capacity to maintain equitable essential health services in any pandemic or emergency. In this current scenario, this study aims to study the trends of hospital care services in one of the remote tertiary hospitals of province 5. The aim of the study was to assess the trends of various important health services along with the onset of the COVID-19 pandemic.

Methods: A cross-sectional study was conducted in which data of the number of OPD cases, emergency cases, inpatients, deliveries, number of surgeries (major and minor), and the number of USG services were collected. Data of seven months prior to the onset of the pandemic (August 15th, 2019 to March 15th, 2020) were compared with data of seven months following the onset of the pandemic (March 16th to October 16th, 2020) were recorded, compared, and plotted.

Results: In regard to inpatients, there was an increment of 47.57%, the number of emergency cases increment by 41.90%, and the number of delivery increments by 94.70% was detected compared to seven months' data prior to the onset of the pandemic. On the other hand, a reduction in total OPD, total number of surgeries, and USG by 32.7%, 13.04%, 5.26% respectively were detected. Looking through the trend, there was a decline in the number of OPD visits, inpatient cases, and emergency cases initially for three months (March-May) following the onset of the pandemic but along with an upsurge of the COVID pandemic, there was a marked increase in these services.

Conclusions: The depiction of such trends of seeking and use of health services in resource-limited tertiary centers during this pandemic reflects the need of strengthening the overall health system. It also emphasizes the importance of the need of addressing non-COVID services during a pandemic, which was greatly affected by COVID-19.

Keywords: COVID-19; health care services; resource limited settings

INTRODUCTION

Corona Virus Disease-2019 (COVID-19) pandemic caused by severe acute respiratory syndrome corona virus-2 (SARS- COV-2), was first detected in Wuhan, China and has now become a global pandemic.¹ The first case of COVID-19 in Nepal was confirmed on 23rd January.² In third week of March, Nepal began to see significant influx of people from India.³ With the increasing numbers of COVID cases a nationwide lockdown was implemented by 24th March, 2020 and ended by 21st July, 2020.⁴ By 23rd June the country had around 10, 000 cases reported.

In such scenarios, the major focuses were managing quarantine and isolation centers and managing the symptomatic COVID cases. The fragile health system and availability of limited resources were vital challenges to cope with this large-scale outbreak and to mitigate its consequences.⁵ With the best efforts, the Government of Nepal was completely determined to combat the pandemic and the Ministry of Health and population

(MOHP) formulated "Health Sector Emergency Response Plan-COVID 19".⁶ With this concept Rapti Academic Health Sciences (RAHS), Ghorahi, Dang at Province 5 was labelled as Level I COVID dedicated hospital. RAHS is currently a 110-bedded tertiary care center in this region. It serves people all the way from Rupandehi, Kapilbastu, Palpa, Arghakhanchi, Gulmi, Rukum, Rolpa, Pyuthan, Dang, and Baanke. The total population of province 5 is 4999272 and the population of Dang district is 552583.⁷ The tertiary centers like RAHS, had a great burden in tackling the COVID as well as Non- COVID cases with limited resources.

This study assessed the trends of various health services used along with onset of COVID-19 pandemic. The study also revealed how the COVID-19 pandemic affected the health care services and their trends over the last 7-month duration following onset of the pandemic.

MATERIAL AND METHODS

This was a retrospective cross-sectional study conducted in Rapti Academy of Health Sciences. The data on various parameters viz. the number of OPD cases, emergency patients, inpatients, deliveries, operations (major and minor) and the number of USG performed were collected from the medical record section of RAHS. The study duration was of 14 months i.e. August 16th, 2019 to October 15th, 2020. From data of seven months prior to the onset of the pandemic (August 16th, 2019 to March 15th, 2020) were compared with data of seven months following onset of pandemic (March 16th to October 15th, 2020). The data collected were tabulated in Excel-19 and trends of services were graphically plotted. Increment or reduction in the number of cases of seven months' duration before onset of the pandemic and following onset of the pandemic were compared as percentage. Ethical clearance was taken from the Institutional review committee of RAHS.

RESULTS

The results of data of seven months' duration prior to onset of the pandemic and following onset of the pandemic were as follows:

Table 1: Various health service parameters pre and post onset of COVID-19 pandemic and the change in percentage.

Parameters	Pre COVID onset	Following onset of COVID	Change in percentage (%)
Number of OPD cases	37088	24957	32.70
Emergency cases	4765	6762	41.90
Inpatient	1837	2711	47.57
Deliveries	511	995	94.70
Total surgeries (Major plus minor)	1171	1014	13.04
USG	5131	4861	5.26

Looking through the trends of services, the first initial three months of COVID-19 pandemic (March 16th – June 15th) there was a slight decline in the number of OPD cases, inpatients and Emergency patients (Figure 1 & 2). Despite ongoing lockdowns throughout the country until 21st July, the services markedly increased. The overall services increased despite the marked increase in the number of COVID-19 positive cases and increasing mortality of COVID-19 in the country as well as in province 5. Looking further through the trends of the overall services, by the end of September the services were reaching to the pre-pandemic level. This also reflected the wearing off effect of COVID-19 and its positive impact in health service delivery. The number of total deliveries initially decreased

in the May but along with an upsurge of pandemic, the number of obstetrics cases increased more drastically (Figure 3). As compared to pre pandemic cases of seven months' duration, following pandemic, there was 94.7% increment in total deliveries. In regard to USG services and surgeries which are highly demanding services also followed similar trends (Figure 4 & 5). There was a decline in both services till June and both services drastically increased. Amidst COVID-19 pandemic, elective and laparoscopic surgeries were cancelled and emergency surgeries were on priority.

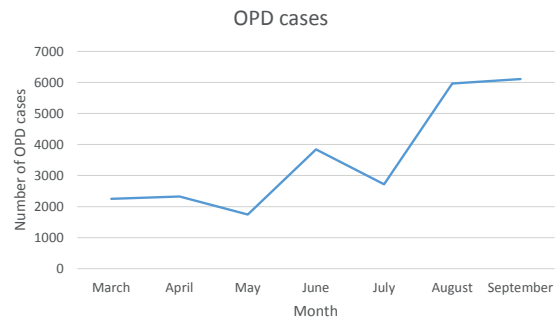


Fig. 1: Trend of OPD cases following onset of pandemic from March to September, 2020

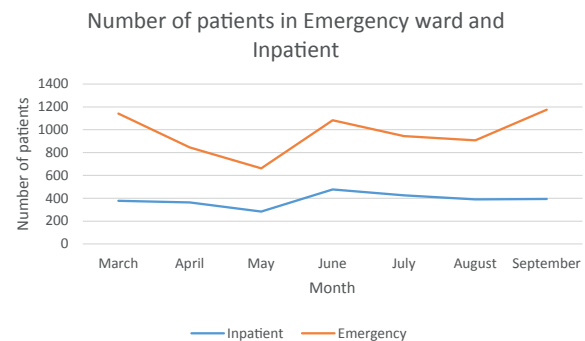


Fig. 2: Trends of inpatients and emergency cases following onset of COVID-19.

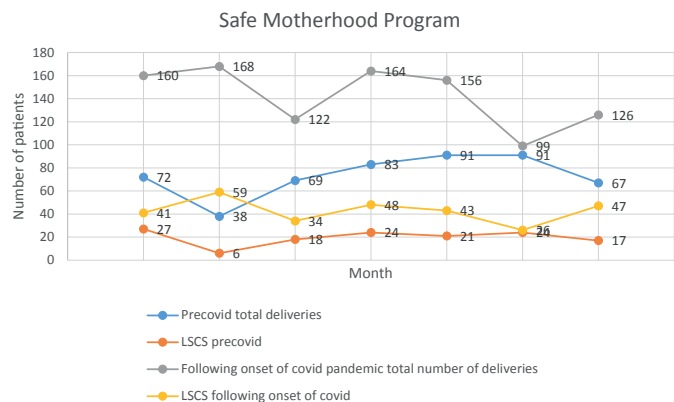


Fig. 3: Trends of total deliveries and caesarean deliveries of seven months prior to onset and following onset of COVID-19

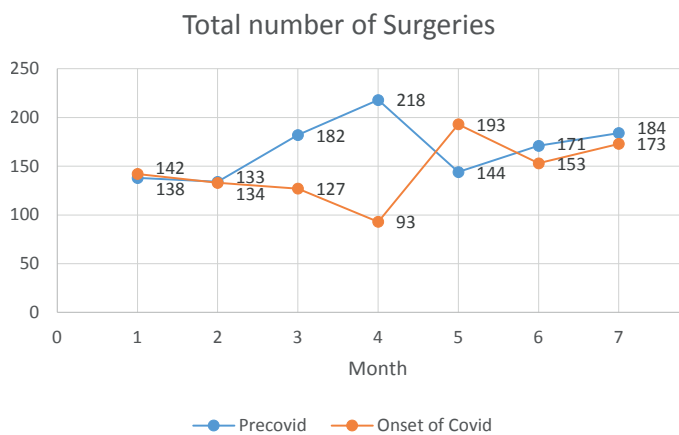


Fig. 4: Trends of number of surgeries performed of seven months prior to onset and following onset of COVID-19

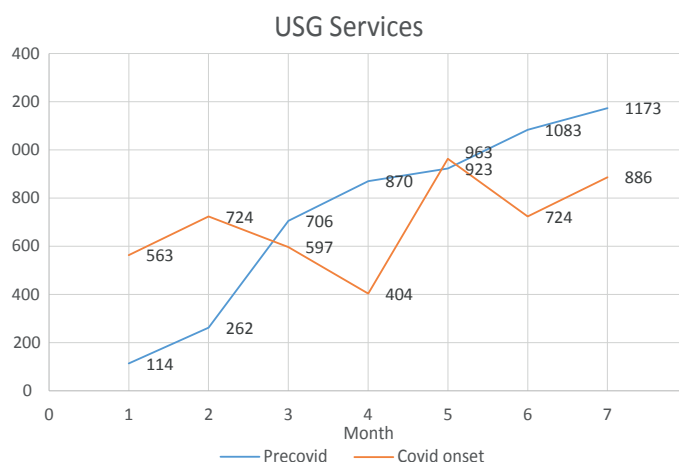


Fig. 5: Trends of USG services pre and post onset of pandemic over seven months' duration.

DISCUSSION

This study assessed the effect of COVID-19 on health care services delivery. The study also revealed the changing trend of hospital services before and after the onset of COVID pandemic. Interestingly, the study depicted the health service seeking behavior was more along with the upsurge of pandemic.

Unlike the patterns of health services that have emerged in other developed countries such as the UK, the USA, France, Spain, Italy and China, the patterns in our center were entirely different.⁸⁻¹⁰ The study hinted how fragile our health system was and how COVID-19 like pandemic had deliberately affected it. As Neupane et al. have enlisted, the major factors in a country like ours are limited infrastructure, human resources, illiteracy, geographic barriers, and poverty as leading ones that have more catalytic effect on impoverishing the health system during such pandemic.¹¹ The increase in health service seeking behavior in remote tertiary centers during pandemic most likely was the effect of lockdown on people movement and more important reason was the health system was entirely affected and people were

deprived of routine health services at local level. With this result, the study emphasizes how important it was to upgrade the remote tertiary centers equally. The study also emphasized that it was mandatory to ensure routine health care services along with any kind of pandemic outbreak. Visualizing the trends of services used over the last seven months following the onset of the pandemic, the pandemic effect is progressively wearing off and its positive effect on health service delivery is being reflected.

This study had some limitations. Firstly, the study had emphasized mainly on curative services. The preventive health services, like the immunizations which had greatly been affected were not included. Secondly, to generalize the results of the study it was important to conduct a similar study in remote tertiary centers of other provinces as well.

CONCLUSION

The depiction of such trends of seeking and use of health services in resource-limited tertiary centers during this pandemic reflects the need of strengthening the overall health system. It also emphasizes the importance of the need of addressing non-covid services during pandemic, which indeed were greatly affected by COVID-19.

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