

Did Emergency Admissions Reduce During Covid Lockdown in India?

Madhumathi Ramakrishnan¹, Prakash Subbarayan²

How to cite this article:

Madhumathi Ramakrishnan, Prakash Subbarayan. Did Emergency Admissions Reduce During Covid Lockdown in India?. Indian J Emerg Med 2020;6(4):263–266.

Author's Affiliation: ¹Joint Vice President, ²Managing Director, Star Health Insurance, 1, New Tank Street, Valluvar Kottam High Road, Chennai 600034, India.

Corresponding Author: Prakash Subbarayan, Managing Director, Star Health Insurance, 1, New Tank Street, Valluvar Kottam High Road, Chennai 600034, India.

E-mail: madhumathi.r@starhealth.in

Abstract

Background: Corona Virus disease 2019 (COVID-19) related lockdown has affected the health sector in many ways. In this study we have analysed the impact of lockdown on emergency admissions.

Aim: To compare the trend and number of claims for medical and surgical emergencies during the lockdown period 1.0 and 2.0 from 25th March to 3rd May 2020 with the same period in 2019.

Methods: All the claims for medical and surgical emergencies from 25th March 2020 to 3rd May 2020 were compared with the similar data for the same period in 2019. This study was performed sourcing the data from the database of Star Health Insurance medical claims platform. ICD-10 codes (59 medical and 57 surgical) were chosen for common medical and surgical emergencies. The results were expressed as percentage of total claims and statistical analysis was performed with Chi square test (Graphpad Prism version 7).

Results: Number of medical emergency claims dropped significantly by 61% during lockdown period 2020 (1899) compared to the same period in 2019 (4900). Cardiac emergencies dropped by 58%; strokes by 58% and gastrointestinal emergencies by 50%. Surgical emergencies dropped significantly by 78% (Non-traumatic emergencies by 67%; Traumatic emergencies by 89%). In 2019 proportion of (medical+surgical) emergencies/total claims was 10413/68480 (15.2 %) and this dropped significantly to 3138/28767 (10.9%) in 2020 (p=0.0001).

Conclusions: Both non traumatic surgical and medical emergencies dropped significantly during lockdown. The reasons for such drop in emergencies are worth analysing further.

Keywords: Covid-19; Emergency; Admissions; Insurance.

Introduction

World Health Organization has declared Corona Virus disease 2019 (COVID -19) as a global pandemic on 11th of March 2020. The Indian government also declared an unprecedented national lock-down from 25th March 2020. Travel ban and lack of public transport facilities were main contributors for reduction in trauma cases. With less people on the road, one can expect reduction in accidents.¹ However when there is a medical or surgical emergency, the general tendency is to call an ambulance and seek emergency help and invariably patients solicit this by reaching out to

the nearest hospital even during the lockdown. While we expected a reduction in elective surgeries and outpatient consultations during lockdown, we did not expect a drop in emergencies. In this study we analyzed the impact of lock-down and to our surprise there was a drastic fall in emergencies. However such a trend is noted in several other publications also.²⁻⁸ The aim of the study is to report and explore reasons for this phenomenon.

Methodology

All the claims for medical and surgical emergencies

from 25th March to 3rd May 2020 (lockdown 1.0 and 2.0) were compared with the similar data for the same period in 2019. This study was performed sourcing the data from the database of Star Health Insurance medical claims platform. ICD-10 codes were selected for common medical and surgical emergencies. Common emergency conditions (59 medical and 57 surgical) from our claims data were chosen.

Medical emergencies were categorized based on common conditions across various systems. Surgical emergencies were categorized into traumatic and non-traumatic emergencies. Number of paid claims was taken for medical and surgical emergencies and absolute number reduction was compared between the years 2019 and 2020. The percentage of emergency claims to total claims was also compared between the periods. Statistical analysis was performed with (Graph pad Prism version 7, San Diego, CA 92108) chi square test. The difference was considered statistically significant if the p value was less than 0.05.

Results

Only emergency cases out of total number of treated cases were analysed. In 2019 proportion of medical emergencies was 4900/68480 (7.15 %) and this dropped significantly to 1899/28767 (6.6%) in 2020 ($p=0.0021$). In 2019 proportion of surgical emergencies was 5513/68480 (8.05 %) and this dropped significantly to 1239/28767 (4.3%) in 2020 ($p=0.0001$). In 2019 proportion of total (medical+surgical) emergencies was 10413/68480 (15.2 %) and this dropped significantly to 3138/28767 (10.9%) in 2020 ($p=0.0001$). Table 1 compares the proportion of medical/ surgical emergencies out of total claims paid between 2020 lockdown period with the corresponding period of 2019.

Table 1 also compares the absolute number of claims between lockdown period in 2020, with the corresponding period in 2019. The total number of claims for emergencies dropped by 70% during lockdown period 2020 (3138) compared to the same period in 2019(10413). Over all medical emergencies dropped by 61% (Fig. 1a) during lockdown period 2020 (1899) compared to the same period in 2019 (4900). Overall Surgical Emergencies dropped by 78%in 2020 (1239) compared to the same period in 2019 (5513). Surgical Non-traumatic emergencies (Fig. 1b) dropped by 67% during lockdown period 2020 (933) compared to same period in 2019 (2773). In traumatic emergencies the trend showed a

significant drop of claims by 89% in 2020 (305) compared to the same period in 2019 (2740).

On comparing the trend in claims for Medical Emergencies we found that there was significant drop by 61% ($p<0.001$) in 2020(1899) compared to 2019 (4900). Cardiac Emergencies dropped by 58%; Strokes and emergencies of Central Nervous System dropped by 58% and Gastrointestinal emergencies also reduced by 50% in 2020 compared to the same period in 2019. Fig. 2 shows the differences in emergencies across the specialities.

Table 1: Medical and Surgical emergencies compared between March 25th and May 3rd of years 2019 (no lockdown) and 2020 (lockdown).

March 25 th - May 3 rd	2019	2020	Significance
No of Medical Emergencies Paid (% of total claims)	4900 (7.15%)	1899 (6.6%)	$p=0.0021$
No of Surgical Emergencies Paid (% of total claims)	5513 (8.05%)	1239 (4.3%)	$p=0.0001$
No. of Medical + Surgical Emergencies Paid (% of total claims)	10413 (15.20%)	3138 (10.9%)	$p=0.0001$
Total No of Paid Claims	68480	28767	-

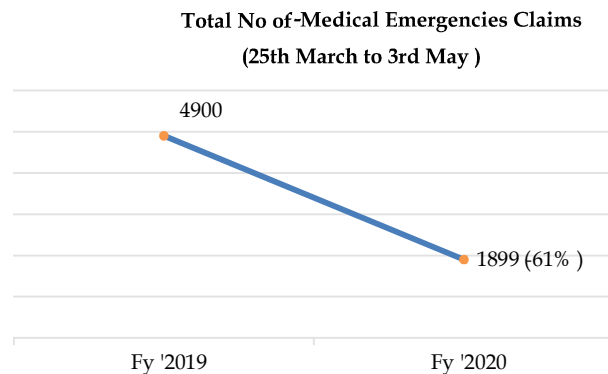


Fig. 1: a) compares the number of medical emergencies between lockdown period in 2020, with the corresponding period in 2019.

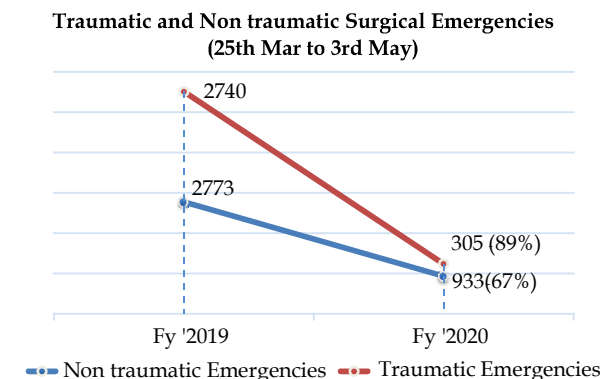


Fig. 1: b) drop in traumatic and non traumatic surgical emergencies between the years.

Sub classification - Medical Emergencies - No of paid Claims (25th March to 3rd May)

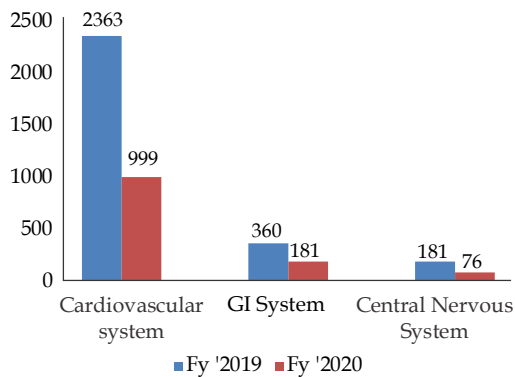


Fig. 2: Bar chart representing drop in cardiac, neurological and gastro intestinal medical emergencies between the years.

Discussion

COVID-19 related lock-down has impacted different people in different ways. The way it has influenced health care industry has impacted the health insurance sector also. While health sector is seeing a new load in the form of COVID-19 claims, we were expecting the proportion of emergency admissions to the total admissions to be almost the same for the lock down period when compared to the previous year. Contrary to our expectations as we analyzed the impact of lock-down 1.0 and 2.0 at a the national level, we found a reduction in emergency admissions in hospitals.

It was pertinent to note that even claims for medical and non-traumatic emergencies dropped significantly during the study period compared to the previous year for the same period in 2019. One can understand the impact of lock-down on traumatic emergencies.¹ But in case of non-traumatic surgical emergencies and related morbidities and mortalities one would expect the numbers to be almost the same at any period. Similarly medical emergencies like heart attacks and strokes were also expected to present themselves to hospital emergency departments.

Even cardiologists wondered on the fall in number of cardiac failures and emergency intervention related to angioplasty and stenting.²⁻⁴ Vasculitis and thrombosis related complications due to COVID-19 resulting in a cardiac or neuro-emergency should have further increased the number, however this was not what we observed. Healthy eating at home, being together with family, less work related stress, lack of opportunity for social interaction resulting in reduced smoking and alcohol intake and general precautions in view

of physical and social distancing have all been reported as some reasons for this reduction in heart attacks/stroke.⁴⁻⁸ The other reasons to endure acute ailments avoiding hospital admissions could be the fear of getting infected in hospitals and financial limitations due to loss of income during lockdown. Other authors have also expressed public health concerns on this fear to seek medical attention.⁷⁻⁸

Alternatively one can wonder whether some emergencies in the previous year could have been managed in an expectant manner. There could be multiple reasons for over-treating emergencies during previous years: 1. anxiety of patients/family triggered by reading unproven information on the internet, forcing the treating doctor to be overcautious 2. Defensive practices wherein doctors are involved in cross consultation and perform extensive evaluation. 3. Huge investments made on infrastructure, equipment, expertise etc. and a growing competition in the ecosystem 4. Health care services turning into a health care industry. The timely attention given by the Physician/ Surgeon to save the lives of people cannot be discounted or debated. However, when the decline in emergencies is out of proportion during the pandemic, we are forced to think of the other reasons in certain pockets.

Some of the limitations of this study are: 1. Including only private sector excluding the major chunk of emergency numbers in government sector hospitals. 2. Even among private sector only insured population is sampled, possibly excluding the larger un-insured sample. However this study covers pan India hospitals catered by Star Health Insurance and is thus likely to represent national trends.

Conclusions

The results of our study demonstrate a drastic reduction in traumatic emergencies during lockdown. But the non-traumatic surgical and medical emergencies (heart attacks and strokes) also dropped significantly in 2020 compared to the previous year. As the number of COVID-19 cases decrease, non-COVID emergencies are expected to get unmasked and rise. Therefore a close watch is needed on the trend of emergencies in the days to come. The findings of this pilot study pave way for further analysis on how the emergencies are generally prioritized and managed. Further studies are needed to analyze the impact of emergency care delivery during covid versus non-covid times.

Conflict of Interest: Both authors are qualified medical doctors with close to a decade of experience in Star Health Insurance. The study is strictly descriptive and analytical based on data reported in our company during COVID -19 lockdown period, leaving no scope for any definite conclusions. The authors opine that a comparative analysis of data from other insurers for the same period and previous years may throw fresh insights.

Funding: Nil

Ethical clearance: not applicable.

References

- Hernigou J, Morel X, Callewier A, Bath O, Hernigou P. Staying home during "COVID-19" decreased fractures, but trauma did not quarantine in one hundred and twelve adults and twenty eight children and the "tsunami of recommendations" could not lockdown twelve elective operations (published online ahead of print, 2020 May 25). *IntOrthop*. 2020;1-8. doi:10.1007/s00264-020-04619-5.
- Hall ME, Vaduganathan M, Khan MS, et al. Reductions in Heart Failure Hospitalizations During the COVID-19 Pandemic (published online ahead of print, 2020 May 13). *J Card Fail*. 2020;10.1016.
- Toniolo M, Negri F, Antonutti M, Masè M, Facchin D. Unpredictable Fall of Severe Emergent Cardiovascular Diseases Hospital Admissions During the COVID-19 Pandemic: Experience of a Single Large Center in Northern Italy. *J Am Heart Assoc*. 2020;9(13):e017122. doi:10.1161/JAHA.120.017122.
- Lantelme P, CourayTarge S, Metral P, et al. Worrying decrease in hospital admissions for myocardial infarction during the COVID-19 pandemic (published online ahead of print, 2020 Jun 25). *Arch Cardiovasc Dis*. 2020;S1875-2136(20)30130-3. doi:10.1016/j.acvd.2020.06.001.
- Zhao J, Li H, Kung D, Fisher M, Shen Y, Liu R. Impact of the COVID-19 Epidemic on Stroke Care and Potential Solutions. *Stroke*. 2020;51(7):1996-2001. doi:10.1161/STROKEAHA.120.030225.
- BresBullrich M, Fridman S, Mandzia JL, et al. COVID-19: Stroke Admissions, Emergency Department Visits, and Prevention Clinic Referrals (published online ahead of print, 2020 May 26). *Can J Neurol Sci*. 2020;1-4. doi:10.1017/cjn.2020.101.
- Rocco B, Sighinolfi MC, Sandri M, et al. The dramatic COVID-19 outbreak in Italy is responsible of a huge drop in urological surgical activity: A multicenter observational study [published online ahead of print, 2020 Jun 18]. *BJU Int*. 2020;10.1111/bju.15149. doi:10.1111/bju.15149.
- Ciacchini B, Tonioli F, Marciano C, et al. Reluctance to seek pediatric care during the COVID-19 pandemic and the risks of delayed diagnosis. *Ital J Pediatr*. 2020;46(1):87. Published 2020 Jun 29. doi:10.1186/s13052-020-00849-w.