

Where have all the diseases gone during the COVID-19 pandemic?

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Abstract

This article focuses on a marked drop in volumes in the lockdown period during the COVID-19 pandemic across all modalities X-ray, sonography, CT scan and MRI scans and compares the volumes of data between a private and public hospital in Mumbai. This trend has been witnessed globally also. Even with easing of lockdown this has not reflected in an increase in numbers. Imaging volumes of a 1900-bed public hospital and a 220-bed private hospital in Mumbai were collated for all modalities, i.e., X-ray, sonography, CT and MRI for the months January, February 2020- Prelockdown, March 2020 Peri-lockdown, April, May 2020- Lockdown, June Unlock 1.0, July Unlock 2.0. The imaging volumes during lockdown, Unlock, were compared with prelockdown values. It was initially felt that this was due to a fear of visiting hospitals that are considered hotbeds of SARS-CoV-2. However, the same status has persisted over the 2 months of lockdown and the 2 months of unlocking. What is the cause of this huge drop in imaging volumes?

Key words: Covid -19 pandemic; lockdown; Mumbai hospitals; non-COVID; prelockdown; unlock

Introduction

Do we prepare for a surge of non-COVID diseases postpandemic?

The key to controlling the COVID-19 pandemic is social distancing, mask and sanitization. This has been publicly advocated through every possible medium. In Mumbai, every billboard was acquired by the municipal corporation from early March with educational messages regarding COVID 19. Every mobile call is preceded by an educational message about COVID-19. In view of this extensive education on social distancing as well as outbreaks of COVID-19 in healthcare establishments, patients are distancing themselves from healthcare establishments. In addition, healthcare establishments were encouraging

only essential/emergency examinations in the early part of lockdown. A study was undertaken to evaluate the impact on imaging volumes at a prominent public and private hospital in Mumbai. Essentially two ends of the economic spectrum to avoid any bias.

Materials and Methods

Imaging volumes of a 1900 bed public hospital and a 220-bed private hospital in Mumbai were collated for all modalities, i.e., X-ray, sonography, CT and MRI for the months January, February 2020- Prelockdown, March 2020 Peri-lockdown, April, May 2020- Lockdown, June Unlock

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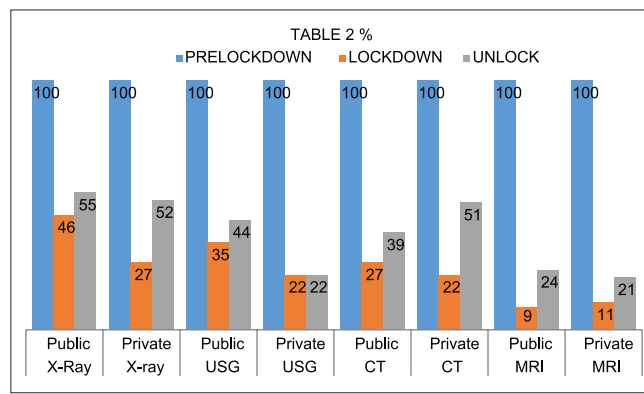
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Table 1: Comparison of volume of each modality during prelockdown, lockdown and unlock

	X-ray		USG		CT		MRI	
	Public	Private	Public	Private	Public	Private	Public	Private
Pre-lockdown	14575	4019	6379	1422	2904	852	628	822
Lockdown	6722	1087	2243	315	789	185	59	93
Unlock	7986	2065	2823	306	1125	433	148	170

Table 2: Percentage of volume during lockdown and unlock as compared to prelockdown

	X-Ray		USG		CT		MRI	
	Public	Private	Public	Private	Public	Private	Public	Private
Pre-lockdown	100	100	100	100	100	100	100	100
Lockdown	46	27	35	22	27	22	9	11
Unlock	55	52	44	22	39	51	24	21



1.0, July Unlock 2.0. The imaging volumes during lockdown, Unlock, were compared with prelockdown values.

In addition, volumes for emergency investigations, stroke – CT/MRI, Acute fractures – X-Ray, Acute abdomen X-ray/sonography/CT/MRI were collated during pre lockdown, lockdown unlock 1.0/2.0 periods and compared with prelockdown values.

Results

Chi-square test analysis was performed and proved to be significant with a value $P < 0.05$.

Tables 1-3 reveal that imaging volume of each modality like X-ray, USG, CT scan, and MRI had significantly dropped during lockdown in both Public and Private Hospitals as compared to pre lockdown. Drop is ranging from 50.0 to 90.0%.

During the unlocked period imaging volume has started increasing trend in all the modalities but will take some more periods to reach to pre lockdown numbers.

Discussion

In the lockdown period there has been a marked drop in volumes, even with easing of lockdown this has not reflected

in an increase in numbers. This drop has been seen across all modalities. X-ray and CT scan especially in a private setting showed some recovery as they were being used mainly for COVID pneumonia evaluation.

This trend has been witnessed globally also.^[1-3]

It was initially felt that this was due to a fear of visiting hospitals that are considered hotbeds of SARS-CoV-2. However, the same status has persisted over the two months of lockdown and the two months of unlocking.

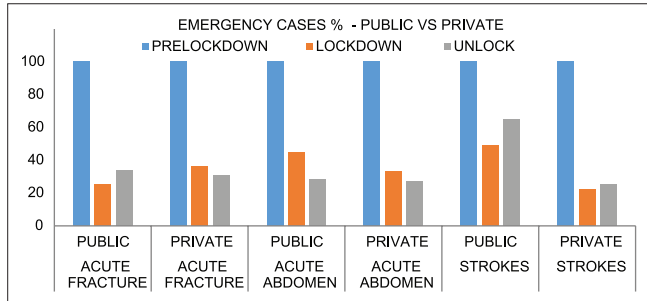
What is the cause for this huge drop in imaging volumes?

At first, it was considered that all non-emergent and non-essential imaging was being postponed by patients, clinicians, and healthcare facilities. However, drops of 80-90% cannot be explained only on this basis.

This prompted a study of emergency imaging, X-rays for fractures, CT/MRI for stroke, X-ray/sonography/CT/MRI for acute abdomen. This covers broadly the emergency spectrum across organs and modalities. All these emergency investigations also showed a significant drop as compared to pre-lockdown. This naturally sparked off a debate where have all the disease or patients gone?

Table 3: Percentage of emergency investigations for stroke, acute fracture and acute abdomen

	Acute fracture		Acute abdomen		Strokes	
	Public	Private	Public	Private	Public	Private
Pre-lockdown	100	100	100	100	100	100
Lockdown	25	36	45	33	49	22
Unlock	34	31	28	27	65	25



- 1 Is it that patients are at home with less stress, home food, leading healthier lifestyles, so there are less strokes, less myocardial infarcts?
- 2 Is it due to the suspension of inter-district and inter-state travel? As many patients from the periphery drain into metropolis; however, travel for medical reasons was freely permitted.
- 3 Is it because there are no engines to bring diseases into the forefront. Preventive medicine in the form of Health check programs and doctors' clinics are not open to screen patients to detect silent diseases.
- 4 Or are patients sitting on a ticking time bombs as they delay diseases that will progress and they will present with advanced disease, likely oncological disease. This

is unfortunate as early detection has proven to reduce the mortality and morbidity in especially oncological diseases.

Conclusion

It seems that all this may be a combination of all the four thought processes.

The main shocker is the reduction in disease process requiring emergency imaging, admission and therapy. These findings are definitely going to stimulate activists against health check, screening programs, those in favour of holistic lifestyles to point out the industry medicine has become. However, the role of the health check screening programs have been proven beyond doubt. Hopefully, individuals will find the perfect balance of a healthier lifestyle, less stress, judicious utilisation of preventive and therapeutic healthcare.

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Conflicts of interest

There are no conflicts of interest.

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Comparison of Imaging Volume of Each Modality During Pre Lockdown, Lockdown and Unlock

Comparison of imaging volume of each modality during pre-lockdown, lockdown and unlock

Test	Pre Lockdown		Lockdown		Unlock	
	Public No. (%)	Private No. (%)	Public No. (%)	Private No. (%)	Public No. (%)	Private No. (%)
X-ray	14575 (100.0)	4019 (100.0)	*6722 (46.1)	*1087 (27.0)	7986 (54.8)	2065 (51.4)
USG	06379 (100.0)	1422 (100.0)	*2243 (35.2)	*0315 (22.1)	2823 (44.3)	0306 (21.5)
CT	02904 (100.0)	0852 (100.0)	*0789 (27.2)	*0185 (21.7)	1125 (38.7)	0433 (50.8)
MRI	00628 (100.0)	0822 (100.0)	*0059 (09.4)	*0093 (11.3)	0148 (23.6)	0170 (20.7)

By Chi-square test; *Significant, $P < 0.05$.

These data reveal that imaging volume of each modality like x-ray, USG, CT scan and MRI had significantly dropped during lockdown in both Public and Private Hospitals as compared to pre lockdown. The drop was ranging from 50.0 to 90.0%.

During unlock period imaging volume has started an increasing trend in all the modalities but will take some more periods to reach to pre lockdown numbers.