



A study on the impact of COVID 19 on hospital visits of non-COVID patients

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Introduction

- As the Indian healthcare system attempts to break the tide of the novel coronavirus pandemic through lockdown, the highest cost for this fight is borne by the non-COVID-19 patients. During this period of global pandemic, OPD and non-emergency services have been stopped in several hospitals so that all resources are diverted for combatting COVID-19 and emergency medical care.

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- Before the COVID 19 pandemic, thousands of patients from less developed states used to visit tertiary care hospitals in metropolitan cities to seek healthcare. But due to the COVID 19 outbreak and the lockdown, their fate hangs by a fine thread now. Patients suffering from non-COVID-19 diseases, patients with scheduled surgical procedures and follow-up visits are undergoing an unimaginable crisis – the impact of which is compounded for patients needing hospitalized care.

The purpose of this report is to showcase the impact of COVID 19 on OPD and IPD procedures. This study also focuses on how non COVID patients are affected by the pandemic. We also see the pattern in conversion rate and cancellation rate in various specialties and elective procedures.



Research Questions

1. What is the OPD conversion rate pre and post Coronavirus outbreak city-wise?
2. What is the IPD conversion rate pre and post Coronavirus outbreak city-wise?
3. What is the cancellation rate in OPD and IPD due to coronavirus outbreak city-wise?
4. What is the impact of COVID 19 outbreak on the incoming OPD and IPD requests in different specialties and procedures in Delhi NCR.

Objectives

1. To compare the OPD conversion rate pre and post Coronavirus outbreak city-wise.
2. To compare the IPD conversion rate pre and post Coronavirus outbreak city-wise.
3. To measure the cancellations in OPD and IPD due to coronavirus outbreak city-wise
4. To study and compare the number of incoming OPD and IPD requests in different specialties and procedures before and after COVID 19 outbreak in Delhi NCR.

Methodology

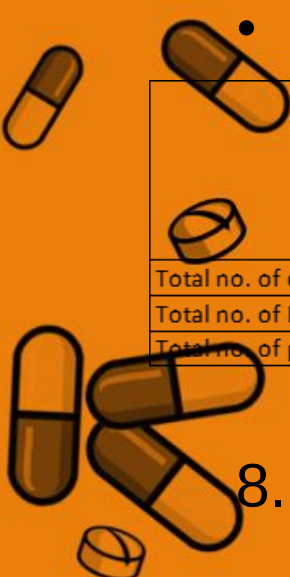
1. Study site - Credihealth
2. Study Period – 3 months (February 3, 2020 to May 4, 2020)
3. Study population – Patients visiting Credihealth through different platforms (website, online App, through telephone)
Inclusion criteria – Non-COVID patients
Exclusion criteria – COVID patients
4. Study design – Study based on analysis of secondary data
5. Study Area – Major cities of India – Delhi-NCR, Mumbai, Kolkata, Bangalore, Hyderabad, and Chennai
6. Sample method – Non-probability convenient sampling



7. Research tool/instrument used – Checklist. A data use cases sheet along with the parameters to be measured was prepared separately for OPD specialties and IPD procedures.

• The parameters studied for OPD specialties are

PARAMETERS	BEFORE 22 MARCH 2020 (before COVID 19 Outbreak)	CONVERSION RATE or CANCELLATION RATE (%)	BETWEEN 22 MARCH - 27 APRIL 2020 (during COVID 19 Outbreak)	CONVERSION RATE or CANCELLATION RATE(%)
Total no. of OPD requests in				
Total no. of converted OPD requests in				
Total no. of OPD cancellations due to COVID 19 in				



• The parameters studied for the IPD procedures are

PARAMETERS	BEFORE 22 MARCH 2020 (before COVID 19 Outbreak)	CONVERSION RATE or CANCELLATION RATE (%)	BETWEEN 22 MARCH - 27 APRIL 2020 (during COVID 19 Outbreak)	CONVERSION RATE or CANCELLATION RATE(%)
Total no. of converted IPD cases				
Total no. of IPD cancellations due coronavirus outbreak				
Total no. of planned surgeries				

8. Data Analysis– Data analysis done through MS Excel.



• Conversion rate:

- *OPD conversion rate =*
(Number of OPD requests converted / Total number of incoming OPD requests) × 100
- *IPD conversion rate =*
(Number of IPD requests converted / Total number of incoming IPD requests) × 100

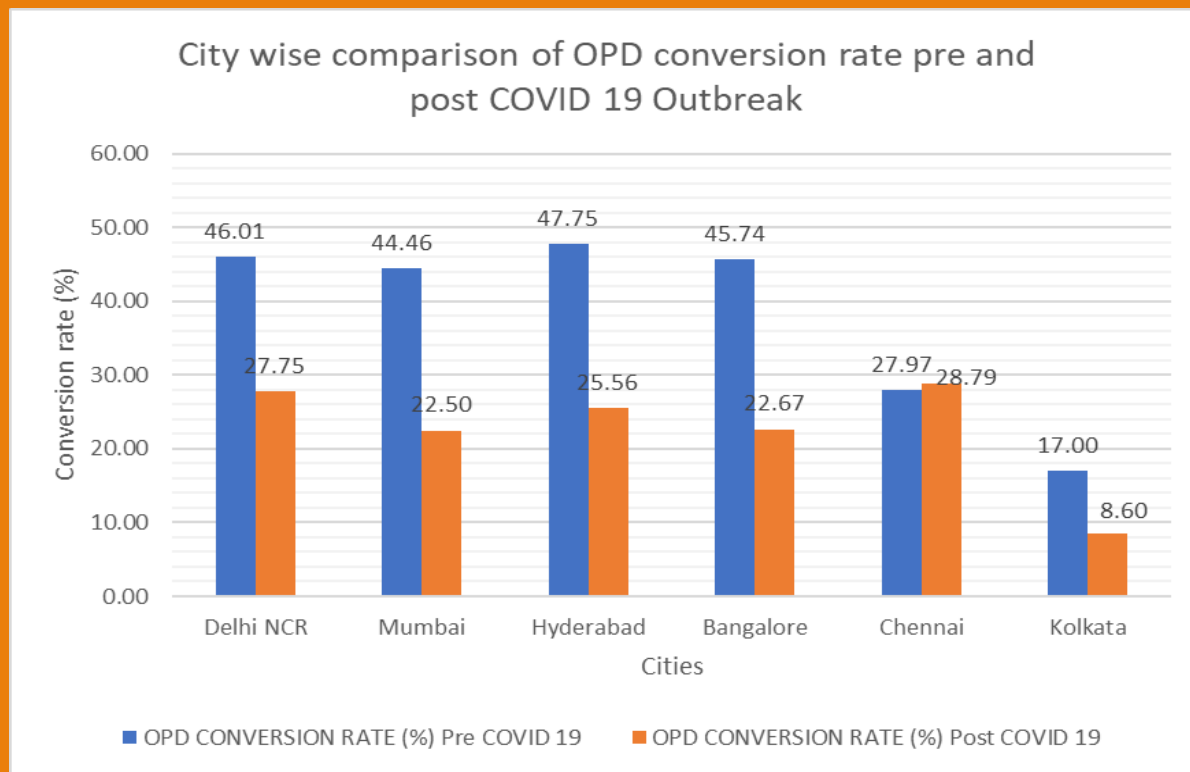
• Cancellation rate:

- *OPD cancellation rate =*
(Number of OPD requests cancelled / Total number of incoming OPD requests) × 100
- *IPD cancellation rate =*
(Number of IPD requests cancelled / Total number of incoming IPD requests) × 100



Analysis

The total data collected was collected from March 1, 2020 to April 30, 2020. A data use cases sheet was prepared. Collected data was then entered in excel and analyzed using frequencies, percentage proportion and graphs.

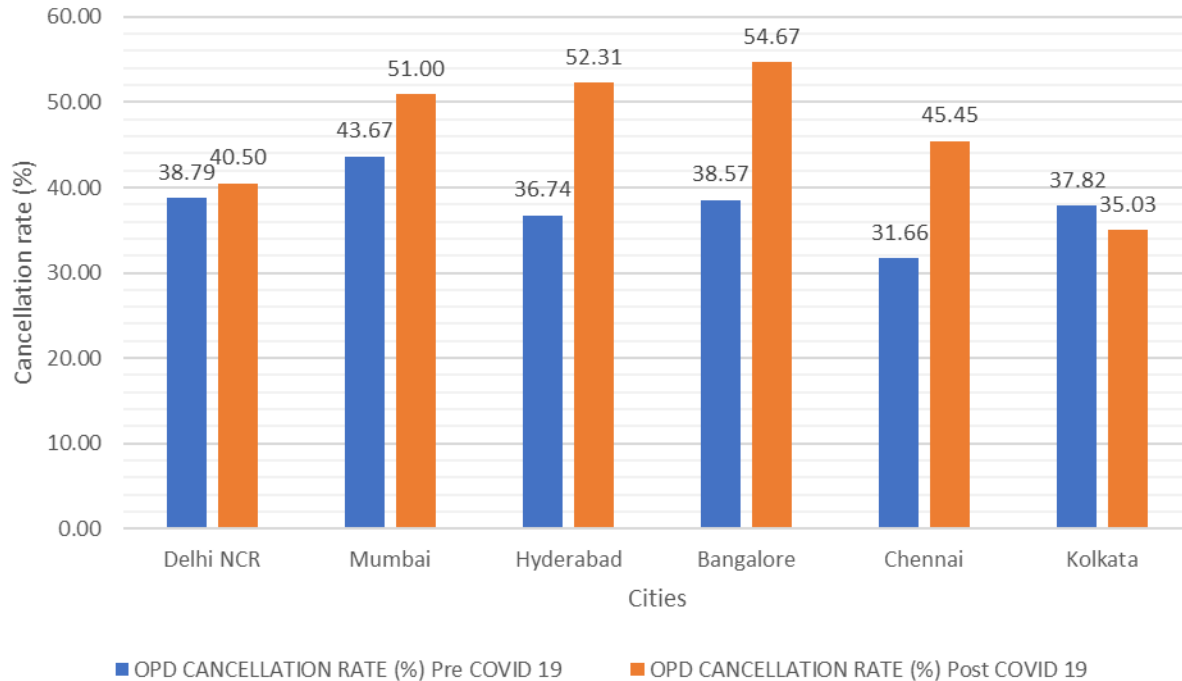


Graph 1: City wise comparison of OPD conversion rate pre and post COVID 19 Outbreak

The above graph can be interpreted as:

- Cities like Delhi NCR, Mumbai, Hyderabad and Bangalore has higher OPD conversion rate before COVID 19 outbreak as compared to Chennai and Kolkata.
- The OPD conversion rate impacted by COVID 19 Outbreak was of Bangalore which decreased to 22.67% (51) from 45.74% (510) followed by Hyderabad which is decreased to 25.56% (216) from 47.75% (1154) and Mumbai which decreased to 22.5% (90) from 44.46% (1015). This shows the higher awareness and higher number of COVID cases which led to decreased conversion rates of these cities.

City wise comparison of OPD cancellation rate pre and post COVID 19 Outbreak



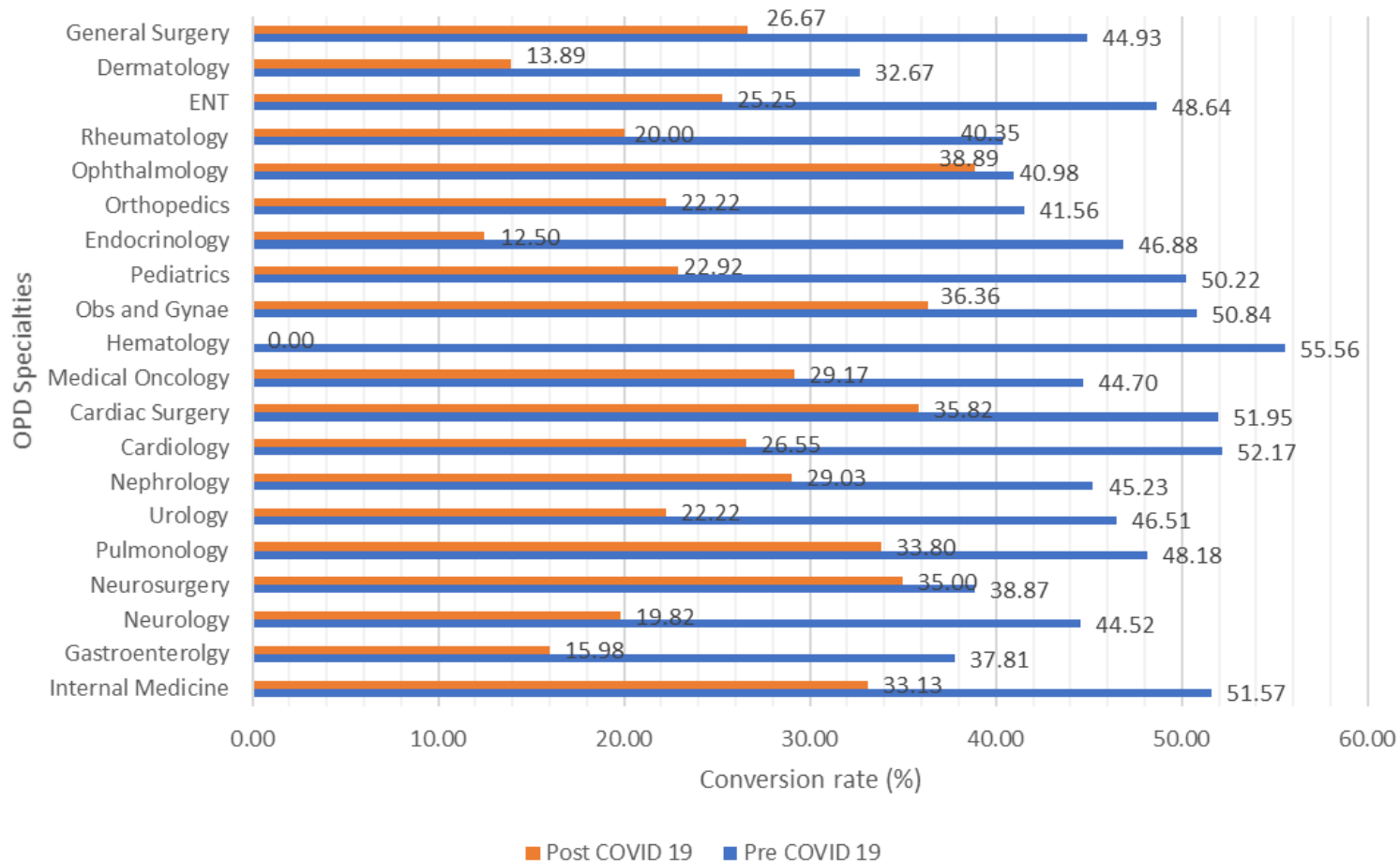
Graph 2: City wise comparison of OPD cancellation rate pre and post COVID 19 Outbreak

Interpretation: The graph can be interpreted as:

- Before COVID 19 Outbreak, Chennai has the minimum cancellation rate among the other major cities which is 31.66% (120) followed by Hyderabad which is 36.74% (888). Whereas Mumbai shows the highest cancellation rate which is 43.67% (997) followed by Delhi NCR which is 38.79% (2906).

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- After COVID 19 Outbreak, Bangalore shows the highest cancellation rate which increased to 54.67% (123) from 38.57% (430) followed by Hyderabad which increased to 52.31% (442) from 36.74% (888). On the other side, Kolkata shows the lowest cancellation rate which is 35.03% (110) followed by Delhi NCR which is 40.5% (648).

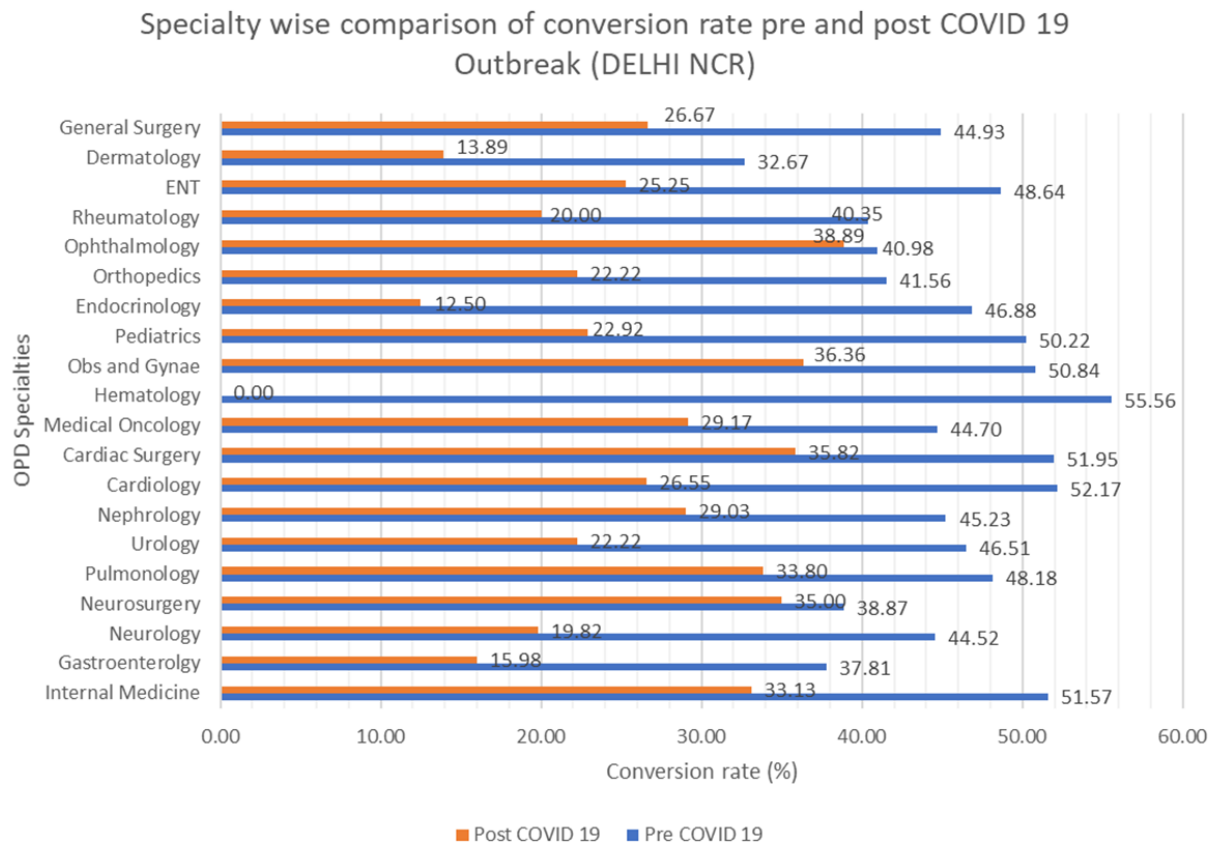
Specialty wise comparison of conversion rate pre and post COVID 19 Outbreak (DELHI NCR)



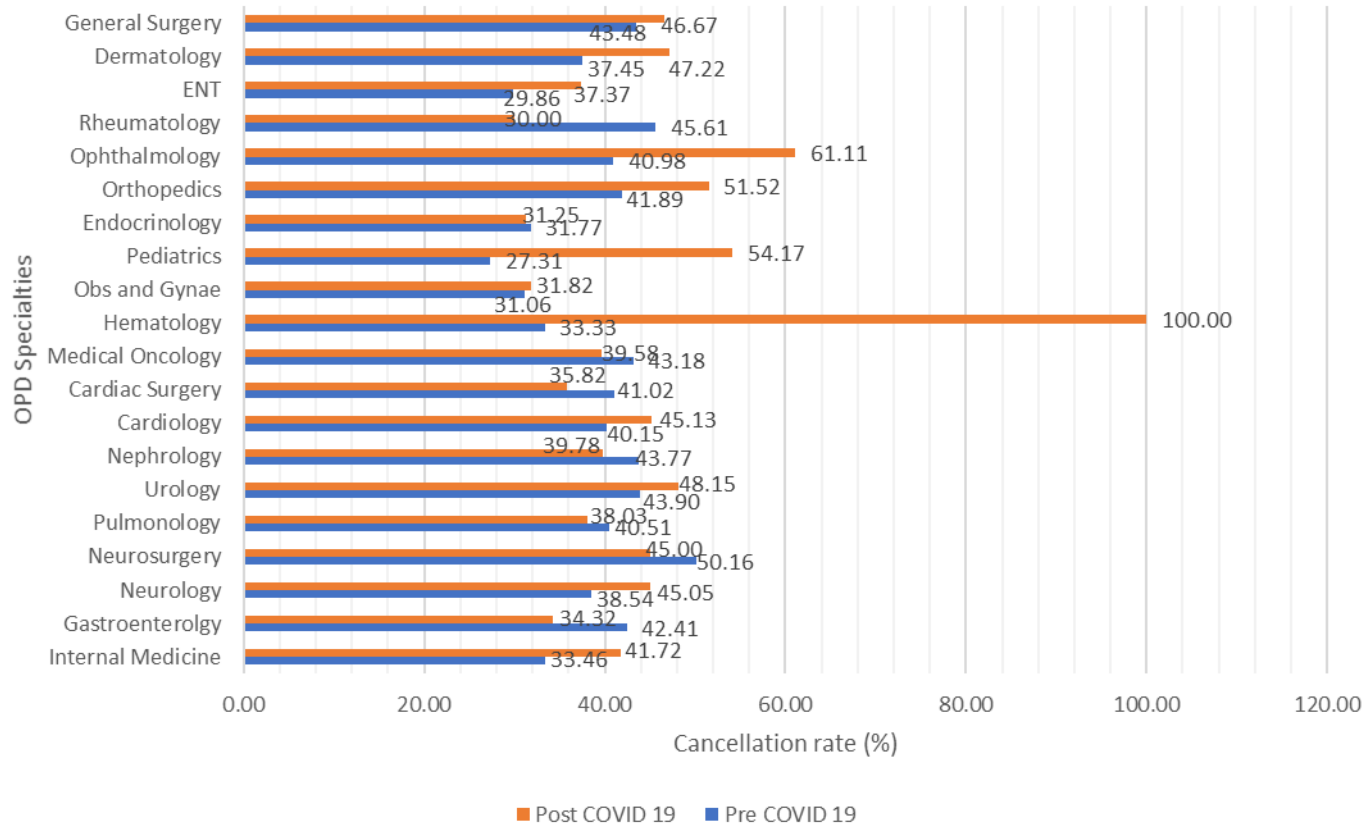
Interpretation: it is evident from the above graph that

- post COVID 19 outbreak, there is overall decline in conversion rate in every specialty.

- Specialties like Internal medicines (33% i.e, 54), Pulmonology (33.80% i.e 24), Obs and Gynae (36.36% i.e 104) and Cardiac surgery (35.82% i.e 24) shows relatively higher conversion rate post COVID 19 among the other specialties.
- There is drastic decline in post COVID 19 conversion rate in hematology. After COVID 19 outbreak, hematology shows sharp decline from 55.56% (5) to 0% (0) conversion rate. This indicates that due to increasing risk of COVID 19, rather than going to the hospitals for the blood tests, patients either postponed their tests or opted for home based healthcare services for such specialty.



Specialty wise comparison of cancellation rate pre and post COVID 19 Outbreak (%) (DELHI NCR)

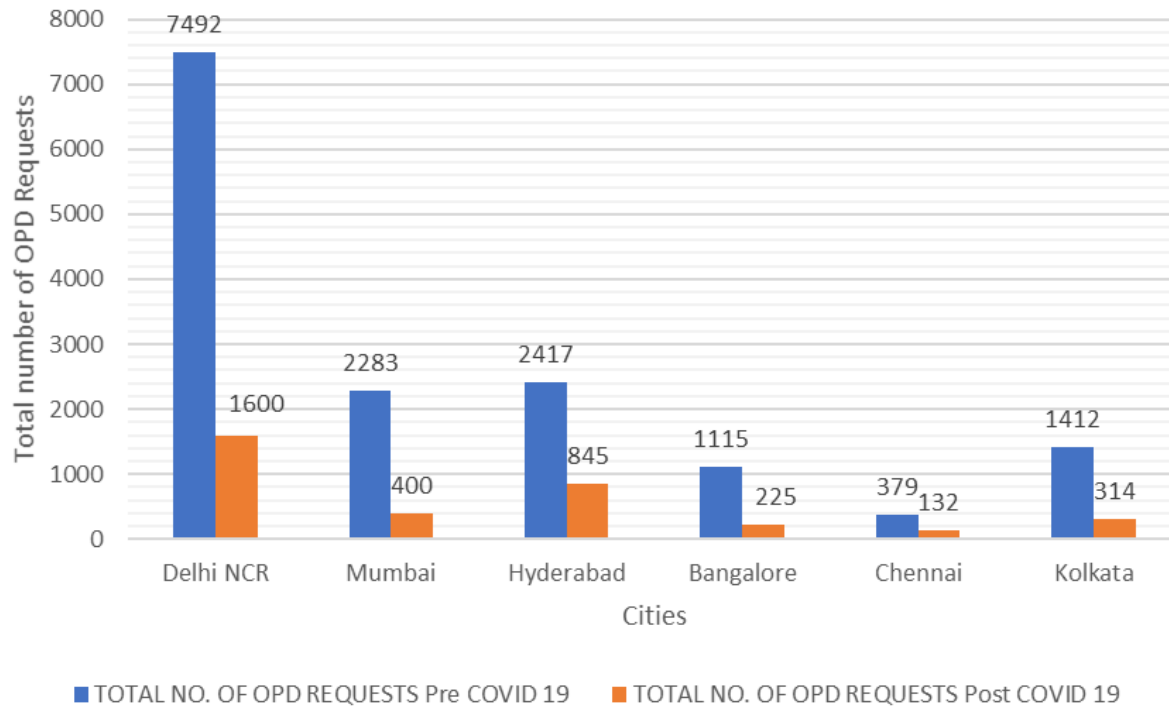


Interpretation: the above graph shows that

- there is overall increase in cancellation rate in every specialty post COVID 19 outbreak.
- In hematology, the cancellation rate rapidly increased from 33% (3) (pre COVID 19) to 100% (4) (post COVID 19) indicating that people stopped going for blood tests and blood related consultations. Instead they started opting for homecare services for blood tests.

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- On the other side, specialties like Obs and Gynae (31.82% ie, 91), Rheumatology (30% i.e 3) and Endocrinology (31% i.e 5) shows the low cancellation rate among the other specialties indicating that these specialties cannot be postponed.

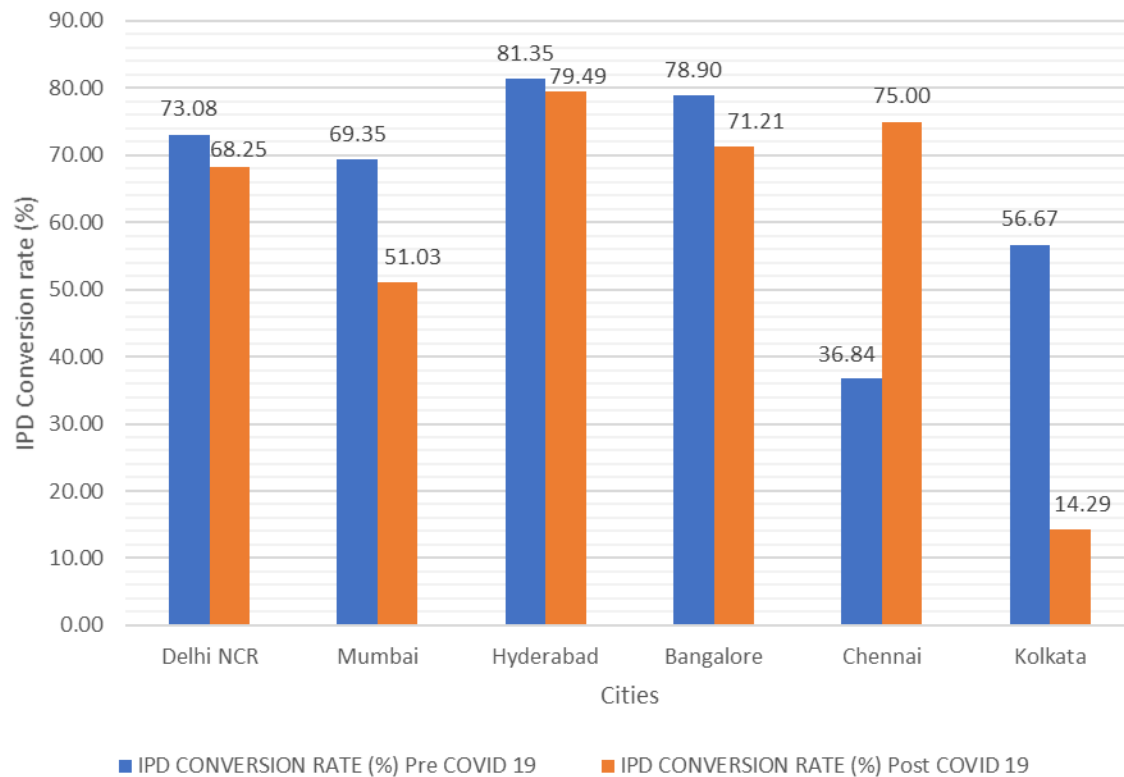
City wise comparison of OPD Requests pre and post COVID 19 Outbreak



Interpretation: it can be interpreted that:

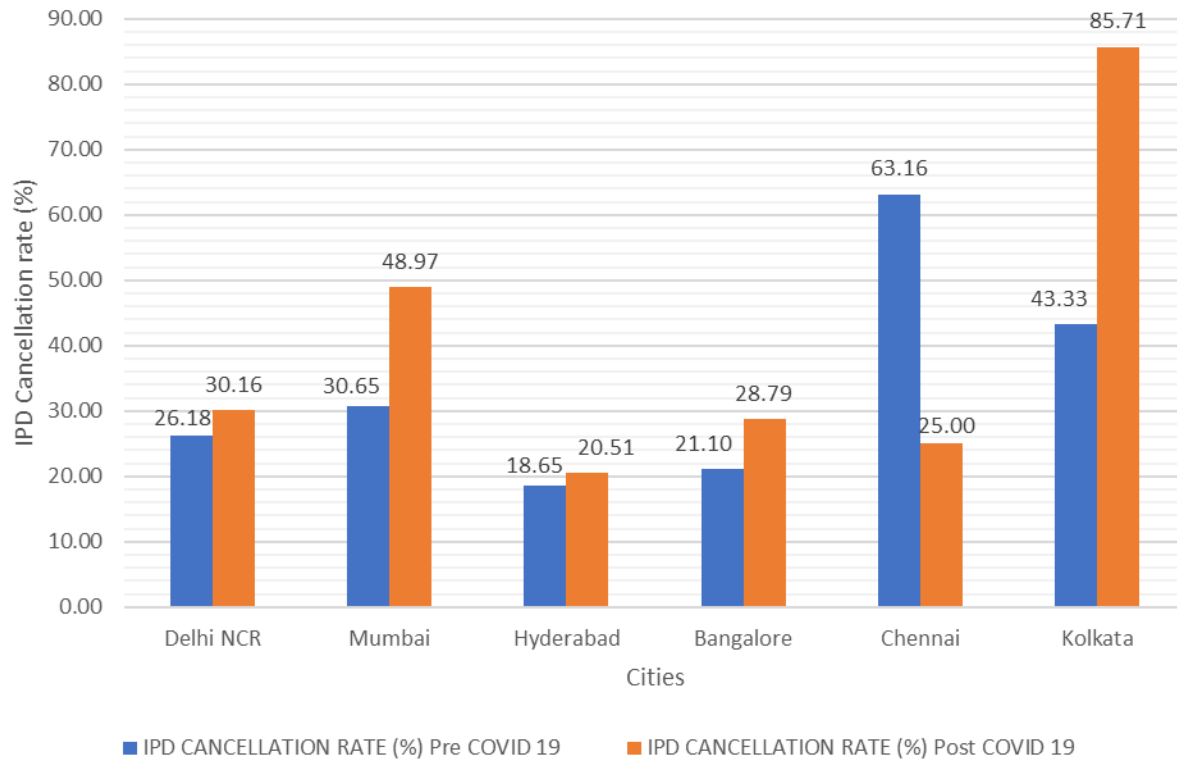
- COVID 19 Outbreak has impacted the number of OPD requests drastically. We see the highest difference in Delhi where the number of OPD requests have dropped from 7492 to 1600. We can see the similar impact on other cities as well.

City wise comparison of IPD conversion rate pre and post COVID 19 Outbreak



- Interpretation: it can be interpreted from the above graph that:
- Before COVID 19 outbreak, Hyderabad has the highest IPD conversion rate which is 81.35% (266) among the other cities followed by Bangalore which is 78.9% (86).
- After COVID 19 outbreak, the number of IPD conversion rate in all the cities declined except Chennai. Furthermore, Kolkata shows the greatest decline in IPD conversion rate which is from 56.67% (17) to 14.29% (1) followed by Mumbai the IPD conversion rate of which declined from 69.35% (181) to 51.03% (74) due to increasing COVID 19 cases.

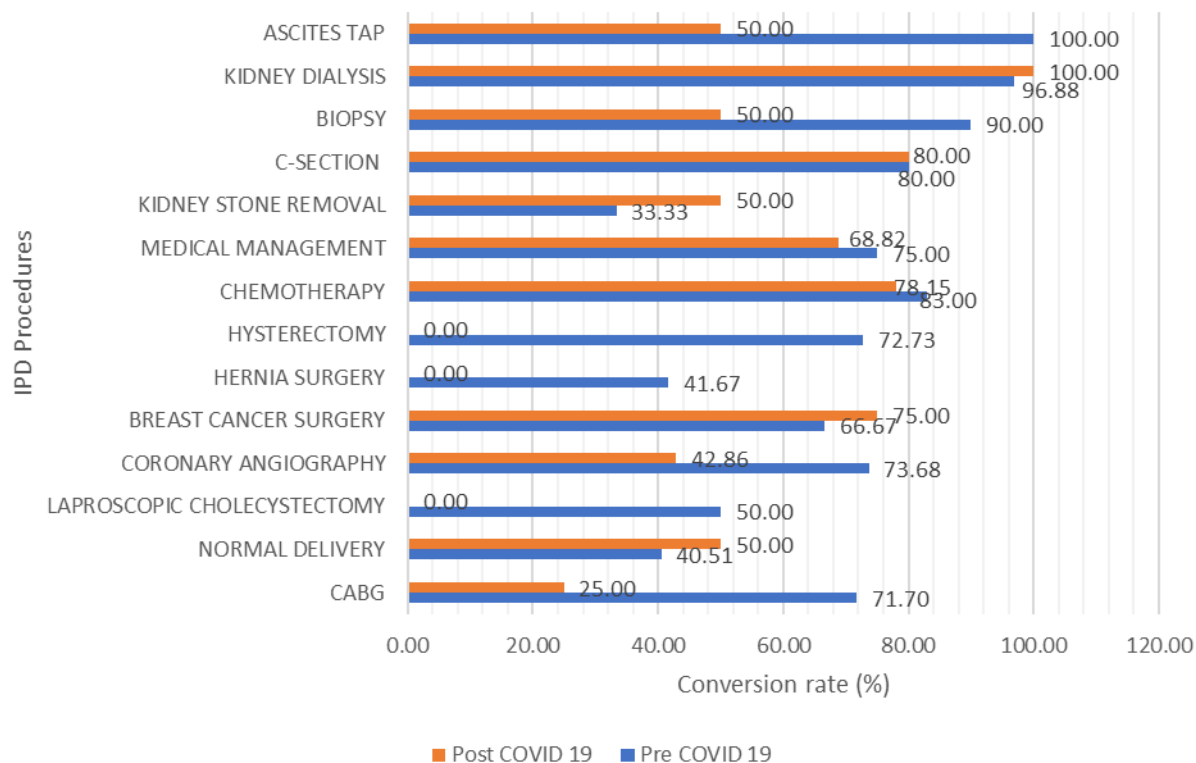
City wise comparison of IPD cancellation rate pre and post COVID 19 Outbreak



Interpretation: the above graph shows that

- There is overall increase in cancellation rates in all the cities post COVID 19 outbreak.
- Kolkata shows the highest cancellation rate which is 85% (6) post COVID outbreak followed by Mumbai which is 49% (71). As mentioned in the previous graph, due to high number of COVID 19 cases and being at higher risk, Mumbai shows high cancellation rate.

IPD Procedure wise comparison of conversion rate pre and post COVID 19 Outbreak (DELHI NCR)

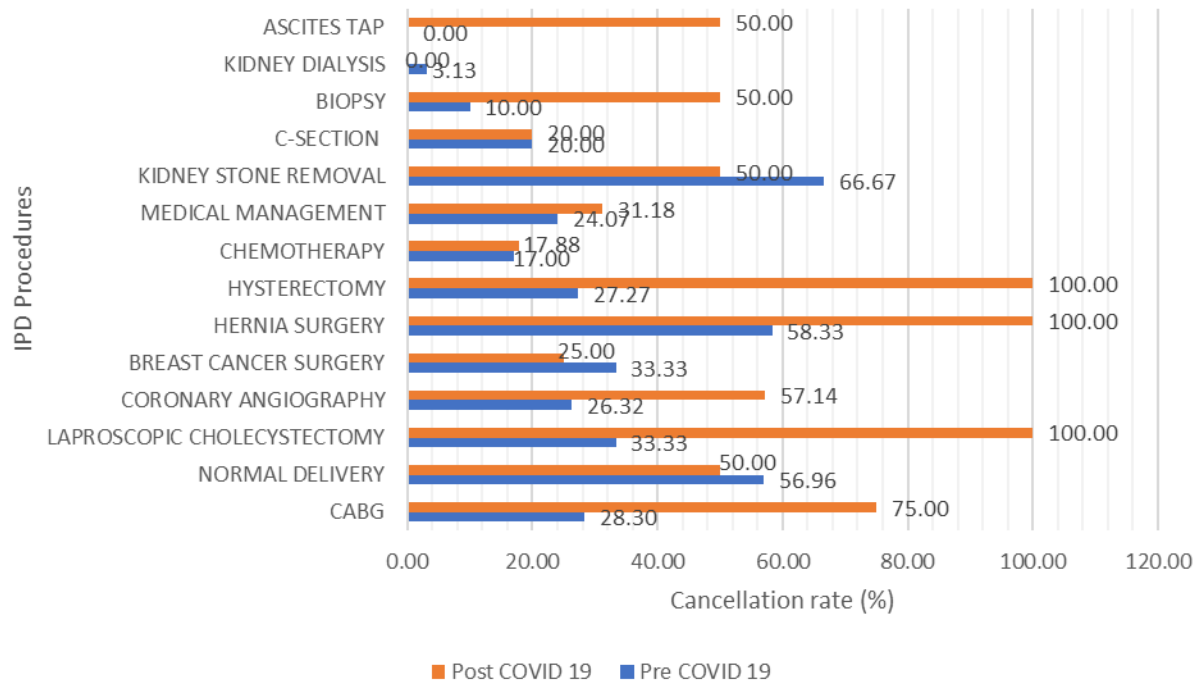


Interpretation: it can be interpreted from the above graph that

- Post COVID 19, there is not much difference in conversion rate of essential IPD procedures. However, the conversion rate of elective IPD procedures declined after COVID 19 outbreak.
- Post COVID 19 outbreak, there is drastic decline in conversion rate of procedures like Hernia surgery, Hysterectomy and Laproscopic Cholecystectomy to 0.

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- However, IPD Procedures like C-section (80%), Chemotherapy (83% in pre COVID to 78% in post COVID) and Kidney dialysis (96.88% in pre COVID to 100% in post COVID) remained almost same post COVID 19 outbreak also indicating them being essential IPD procedures.

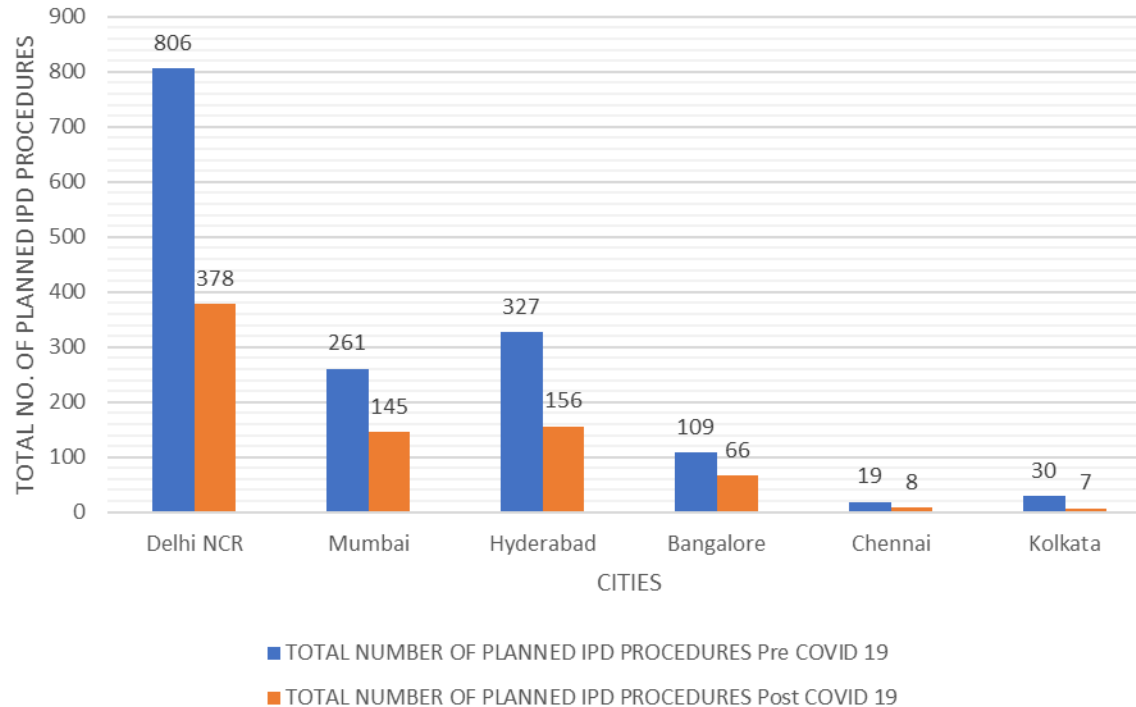
IPD Procedure wise comparison of cancellation rate pre and post COVID 19 Outbreak (DELHI NCR)



Interpretation: it is clearly evident from the above graph that

- The cancellation rates post COVID 19 outbreak increased drastically in every IPD procedure.
- IPD procedures like Hernia Surgery (100%), Hysterectomy (100%), and CABG (75%), being elective procedures shows highest cancellation rates among all the IPD procedures which is way more than what was before COVID 19 outbreak.
- However, Chemotherapy remained unaffected by COVID 19 outbreak. Its cancellation rate remained same as before COVID 19 outbreak (17%).

City wise comparison of IPD Requests pre and post COVID 19
Outbreak



Interpretation: the above graph shows the city wise comparison of IPD requests before and after COVID 19 outbreak. It can be interpreted as:

- Before COVID 19 outbreak, Delhi has the maximum number of IPD requests (806) followed by Hyderabad (327) and Mumbai (261).
- A drastic decline in the incoming IPD requests can be seen in all the cities. However, Delhi NCR shows the maximum decline in the incoming IPD requests from 806 (pre COVID 19 outbreak) to only 378 (post COVID 19 outbreak) followed by Hyderabad the IPD requests of which declined from 327 to 156.

Conclusion

- From graph 1 and graph 6, which depicts city wise comparison of OPD and IPD conversion rate pre and post COVID 19 Outbreak, we can interpret that the conversion rates were higher in pre pandemic than post COVID 19 outbreak. It was because due to pandemic, hospitals shut down and only essential services were being provided.
- From graph 2 and graph 7, which indicates the city wise comparison of OPD and IPD cancellation rate pre and post COVID 19 outbreak, we see greater cancellation rates since hospitals were providing essential services only. Patient had to cancel their prior appointments due to lockdown.
- Graph 3 and graph 8 which shows OPD specialty and IPD Procedure wise comparison of conversion rate pre and post COVID 19 Outbreak in DELHI NCR. We see that essential procedures like chemotherapy could not be stopped as it is a matter of life and death. And also, important OPD specialties like Pulmonology, Internal medicine and Obs and Gynae shows comparatively higher conversion rates. Hence, the conversion rates remained similar for such kind of procedures and OPD. However, for elective procedures like Hernia surgery, the conversion rate dropped drastically as they can be postponed.

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- Similarly, the cancellation rates increased for elective surgeries but remained unchanged for essential procedures. This can be seen from graph 4 and graph 9 which shows OPD specialty and IPD Procedure wise comparison of cancellation rate pre and post COVID 19 Outbreak in DELHI NCR (respectively).
 - From graph 5 and graph 10 shows city wise comparison of OPD and IPD Requests pre and post COVID 19 Outbreak, we can say that the number of requests got limited to essential services only during the pandemic. Hence, we see a drop in both OPD and IPD requests.
 - From the analyzed graphs, we can conclude that due to COVID 19, the hospitals faced a major impact and services were delayed to the patients. The pandemic has hugely affected the healthcare sector.



Consequences of the findings

- Healthcare utilization is affected. To combat the pandemic and decrease in appointments, hospitals adopted the telehealth methodology wherein the patients could contact their doctors on virtual platform. This removed the requirement of the physical presence of the patients at hospital.
- Given the scenario that the patient could not go physically to the hospital for their diagnostics, Credihealth started appointments for diagnostics and providing medicines delivered at home.
- With social distancing becoming one of the most important things during pandemic, Credihealth also started shifting towards making healthcare at home appointments for their clients.

References

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- (Cavallo, Donoho and Forman, 2020)
- (Singh, 2020)
- (Conversion Rate, 2020)
- (Percentage of No-Show Appointments | IHI - Institute for Healthcare Improvement, 2020)