



## IMPACT OF COVID-19 ON SURGICAL PRACTICE AT TERTIARY CARE HOSPITALS IN ERNAKULAM

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**ABSTRACT** **BACKGROUND:** COVID-19 is a communicable disease caused by novel coronavirus. Surgical practice has been significantly affected during this crisis. So, addressing the current situation of the COVID- 19 pandemic, necessary changes have to be made regarding the operation theatre infrastructure, outpatient department protocols. The impact of the pandemic is varied throughout Kerala. Therefore, district-wise studies are necessary to prevail over the pandemic. **AIM:** To assess the impact of COVID -19 on Surgical Practice at tertiary care hospitals in Ernakulam. To provide suggestions that can reduce the ill effects of COVID -19 on Surgical Practices.**METHODOLOGY:** The data was collected from 64 responses obtained from the questionnaire send to various tertiary care hospitals in Ernakulam. The data from these records were entered into Microsoft Excel and analyzed using SPSS.**RESULT:** Out of the 64 who responded to our questionnaire, 95.3% agreed that there was a decrease in the number of major elective surgeries, 89.1% agreed that there was a decrease in the number of minor surgeries, 96.9% agreed that there was a decrease in the OP attendance since the COVID-19 Pandemic began. Out of the 64 who responded to our questionnaire, 90.6% agreed that the Elective and Non-urgent Surgeries are being postponed/cancelled due to the COVID-19 Pandemic.

**KEYWORDS :** Covid-19, Surgery

### INTRODUCTION

COVID-19 is a communicable disease caused by novel coronavirus. India's first COVID-19 case was reported in Kerala on 30 January 2020. The state government declared a health emergency in the state, after two more cases were confirmed on February 2 and 3, 2020. As of 5th December 2020, there are 6,25,768 confirmed cases of which 61,410 are active cases, 5,61,874 recovered and 2,359 deceased in Kerala.

Elective, minor OT procedures and emergency procedures of Surgical department are an important aspect of the community's health care system. The transmission of the novel corona virus can occur easily in operation theatre settings and the outpatient department as well.

Surgical practice has been significantly affected during this crisis. The pandemic has forced modifications to be introduced into the working of surgical department. Surgeons across India use personal protective equipment for all cases to reduce the risk of transmission. So, addressing the current situation of the COVID- 19 pandemic, necessary changes have to be made regarding the operation theatre infrastructure, outpatient department protocols.

The impact of the pandemic is varied throughout Kerala. Therefore, district-wise studies are necessary to prevail over the pandemic. This research analyses the current trend in the decrease in surgeries being performed and outpatient attendance of surgical specialities in Ernakulam. It also provides recommendations for effective functioning of surgical specialities during this pandemic based on the review by surgeons of tertiary care hospitals in Ernakulam.

### OBJECTIVES

**Primary Objective:** To assess the impact of COVID 19 on Surgical Practice at Tertiary care hospitals in Ernakulam.

**Secondary Objective:** To provide suggestions that can reduce the ill effect of COVID 19 on Surgical practices.

### Literature Review

#### Surgery Triage during the COVID-19 Pandemic

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This study was conducted in Australia and accepted for publication on 10 July 2020.

### AIM:

The aim of this review was to summarise the advice of Australian and New Zealand speciality societies, as well as those of other countries, regarding triaging of surgical cases. Based on this advice and input from an expert working group, overarching principles have been provided to inform local decision-making on elective surgery, and to protect surgical teams while maintaining equitable access to surgical treatment.

### METHOD:

A rapid review methodology was adapted to search for all levels of evidence on triaging surgery during the current COVID-19 outbreak. Searches were limited to PubMed (inception to 10 April 2020) and supplemented with grey literature searches using the Google search engine. Further, relevant articles were also sourced through the RACS COVID-19 Working Group. Recent government advice (May 2020) is also included.

### RESULT:

This rapid review is a summary of advice from Australian, New Zealand and international speciality groups regarding triaging of surgical cases, as well as the peer-reviewed literature. The key theme across all jurisdictions was to not compromise clinical judgment and to enable individualised, ethical and patient-centred care. The topics reported on include implications of COVID-19 on surgical triage, competing demands on healthcare resources (surgery versus COVID-19 cases), and the low incidence of COVID-19 resulting in a possibility to increase surgical caseloads over time.

**CONCLUSION:** During the COVID-19 pandemic, urgent and emergency surgery must continue. A carefully staged return of elective surgery should align with a decrease in COVID-19 caseload. Combining evidence and expert opinion, schemas and recommendations have been proposed to guide this process in Australia and New Zealand.

**METHODOLOGY**

**Study Design:** Cross sectional study

**Study Setting:** Tertiary care hospitals in Ernakulam.

**Study Conduct:** Data obtained through the circulation of an online questionnaire prepared in Google Forms among Tertiary Care Hospitals in Ernakulam was entered into Microsoft Excel and analysed with the help of IBM SPSS Statistics 22.0 Version.

**Study Duration:** 2 months

**Study Tools:** Online Questionnaire

**Sample Size:** The pilot study was conducted among 4 general surgeons, 5 surgical specialists and 5 surgical speciality postgraduate students with the help of self-generated questionnaire. The questionnaire was validated with a reliability of 0.74.

The key questions in the questionnaire were to analyze the changes in the number of cases (major elective, minor cases and OP attendance) since the pandemic began. Also, to analyze whether elective and non-urgent surgeries were postponed/cancelled due to the pandemic.

Based on the proportions of decrease in the cases since the COVID 19 pandemic began (92.85%) and elective and non-urgent surgeries being postponed/cancelled due to the COVID 19(85.71%) were obtained from the pilot study conducted in 14 sample, and with 95% confidence and 10% relative precision the minimum sample size comes to 30 and 64 respectively. Then the total minimum sample size comes to 64.

**Selection Process:** Data from surgeons of different surgical specialities, surgery post graduate students and intern who have filled the form.

**INCLUSION CRITERIA:**

- 1.a) Surgeons of all specialties
- b) Post Graduate students of all specialties
- c)UG interns who have completed surgery posting recently or are undergoing their surgery posting currently.

2. Working/Training in Ernakulam, Kerala.

**EXCLUSION CRITERIA:**

- 1. Doctors of non-surgical specialties
- 2. UG interns who have not completed/undergone surgery posting.
- 3. Surgeons, Post Graduate students of all specialties and interns who are working/training outside Ernakulam.

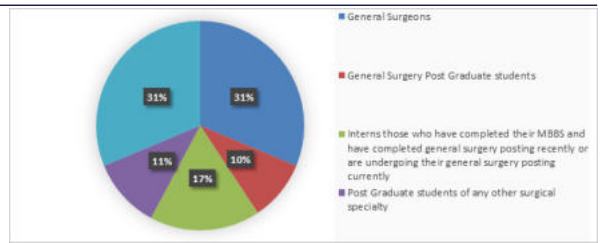
**Consent:** Informed consent was obtained along with the online form

**Ethical guidelines:** Ethical permission was obtained from the IRB Committee of Amrita Institute of Medical Science, Kochi. The participants' participation was entirely voluntary, and they were automatically led to a message explaining the study's purpose and the consent form that accompanied it. When they clicked the link, consent was obtained by answering a yes/no question to confirm their desire to participate. On confirming, the participant was instructed to fill the questionnaire, and confidentiality of the data was guaranteed.

**RESULT**

**Distribution of Participants who responded to the questionnaire according to designation.**

Designation	Frequency	Percent
General Surgeons	20	31.3
General Surgery Post Graduate Students	6	9.4
Interns those who have completed their MBBS and have completed general surgery posting recently or are undergoing their general surgery posting currently.	11	17.2
Post Graduate students of any other surgical specialty.	7	10.9
Surgical Specialist	20	31.3
Total	64	100



**Distribution of Surgeons and Postgraduate Students According to Speciality**

Surgical Speciality	Frequency	Percent
Breast surgeon	1	1.6
Cardiothoracic Surgery	2	3.1
ENT Surgery	2	3.1
Gastrointestinal Surgery	3	4.7
Head and Neck Surgery	1	1.6
Neurosurgery	2	3.1
Ophthalmology	3	4.7
Orthopedic Surgery	4	6.3
Pediatric Surgery	3	4.7
Plastic and Reconstructive Surgery	2	3.1
Surgical Gastroenterology and Transplant Surgery	3	4.7
Urology	1	1.6

**Changes in Number of Major Elective Surgeries Since the COVID-19 Pandemic Began**

Changes	Frequency	Percent
Decreased	61	95.3
Increased	1	1.6
No change	2	3.1

Out of the 64 who responded to our questionnaire, 95.3% agreed that there was a decrease in the number of major elective surgeries since the COVID-19 Pandemic began.

**Changes in The Number of Minor Surgeries Since the COVID-19 Pandemic Began**

Changes	Frequency	Percent
Decreased	57	89.1
Increased	1	1.6
No change	6	9.4

Out of the 64 who responded to our questionnaire, 89.1% agreed that there was a decrease in the number of minor surgeries since the COVID-19 Pandemic began.

**Changes in The OP Attendance Since the COVID-19 Pandemic Began**

Changes	Frequency	Percent
Decreased	62	96.9
Increased	2	3.1
No change	0	0

Out of the 64 who responded to our questionnaire, 96.9% agreed that there was a decrease in the OP attendance since the COVID-19 Pandemic began.

**Elective and Non-Urgent Surgeries Being Postponed/Cancelled Due to the COVID-19 Pandemic**

Yes/No	Frequency	Percent
Yes	58	90.6
No	6	9.4

Out of the 64 who responded to our questionnaire, 90.6% (58) agreed that the Elective and Non-urgent Surgeries are being postponed/cancelled due to the COVID-19 Pandemic.

Out of the 64 respondents of our questionnaire, 31.3% were General Surgeons, 31.3% were Surgical Specialist, 9.4% were Post Graduate Students of General Surgery, 10.9% Post Graduate students of surgical specialties (other than General Surgery) and 17.2% were Interns those who have completed their MBBS and have completed General Surgery Posting recently or are undergoing their General Surgery Posting currently.

95.3% agreed that there was a decrease in the number of major elective surgeries since the COVID-19 Pandemic began. 89.1% agreed that

there was a decrease in the number of minor surgeries since the COVID-19 Pandemic began.

96.9% agreed that there was a decrease in the OP attendance since the COVID-19 Pandemic began.

90.6% agreed that the Elective and Non-urgent Surgeries are being postponed/cancelled due to the COVID-19 Pandemic.

96.9% (62) said that all the patients posted for surgical procedures are tested for COVID 19 prior to surgery while 3.1% (2) said that only suspected cases are being tested for COVID 19 prior to surgery.

57.8% (37) said that PPE Kits were used by surgeons and staff for all surgical procedures while 42.2% (27) said that PPE kits were used by surgeons and staff for only surgical procedures on COVID 19 positive cases.

56.3% (36) said that changes have been made in the operation theatre infrastructure to minimize the risk of transmission of COVID-19 of which 6.2% (4) had said that Negative pressure OTs were being used and 43.75% (28) said that no changes were made in the operation theatre infrastructure.

95.3% (61) said that the number of staff in the OT is being restricted to prevent the risk of transmission while 4.7% (3) responded that the number of staff in OT had not been restricted/limited.

71.9% (46) said that the surgeons and staff are being monitored for COVID-19 while 28.1% (18) said that they were not being monitored.

## DISCUSSION

In this study we determined the impacts of COVID-19 on Surgical Practices in Tertiary Care Hospitals in Ernakulam.

- Out of the 64 who responded to our questionnaire, 95.3% agreed that there was a decrease in the number of major elective surgeries since the COVID-19 Pandemic began.
- In a study conducted by Amrit Manik Nasta, 41.8% had mainly laparoscopic practice with mean outpatient consultation of 26 patients/day and elective surgeries of 43 cases /month prior to lockdown. Post lock-down, daily outpatient consults reduced to 4 patients/day and 77% had not performed even a single elective procedure [1].
- Out of the 64 who responded to our questionnaire, 96.9% agreed that there was a decrease in the OP attendance since the COVID-19 Pandemic began.
- In a study conducted by Yi Low in Singapore, Outpatient visits fell by 43%, from 7842 in 2019 to 4482 visits in their study period [2].

## CONCLUSIONS

Based on the above study, there has been a decrease in the number of cases (major elective, minor cases and OP attendance) since the pandemic began in tertiary care hospitals in Ernakulam.

Also, elective and non-urgent surgeries were postponed / cancelled due to the pandemic.

Therefore, from our study data the following are the recommendations for effective functioning of surgical specialities during this pandemic:

- Number of staff in the OT can be restricted to a few to prevent the risk of transmission and use of Negative pressure OT for surgeries on COVID positive patients.
- Usage of PPE Kits by surgeons and staff during all surgical procedures especially the ones conducted on COVID-19 positive patient.
- Testing of all the patients posted for surgical procedures for COVID-19 prior to surgery. RTAs and Emergency procedures have to be attended to promptly with the required precautions to prevent COVID-19 transmission.
- Surgeons and staff have to be monitored for COVID -19.

## LIMITATIONS

This study was conducted in tertiary care hospitals. Therefore, it may not be an accurate representation of the community.

The trouble with not presenting the questions to respondents face-to-face, and hence each may have different interpretations of our questions.

Open-ended questions allow for individualized answers which cannot be quantified. Also, respondent bias is a matter of concern.

## REFERENCES

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