

APOLLO KAVACH

Resource Optimization through Hotel Beds for COVID 19 Isolation

A background image showing a group of people in a meeting. A man with grey hair and a plaid shirt is looking towards a woman with glasses. Another person with curly hair is seen from the back. A man with a beard is gesturing with his hands while speaking. The image is semi-transparent.

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Initiative of **Apollo Kavach**.

Financial Partners **HUL, SBI, Deutsche Bank**.

Supported by **Lemon Tree, Ginger, OYO, Zomato**.

THE BIG IDEA

- COVID-19 pandemic has spread to every country on earth taking lives, shutting down economies, and creating worldwide havoc and panic. With growing number of COVID-19 cases in India, we all must do what it takes to deal with this single most unprecedented global event of our lifetimes.
- To address the need for monitored Home Isolation, as not all COVID-19 patients with symptoms need hospitalization, Apollo Hospitals Group has come out with an innovative COVID-19 home care services called Stay I @HOME.
- To guarantee reasonable, safe rooms, Apollo Hospitals has united with Deutsche bank, Hindustan Unilever, State Bank of India, Oyo Rooms, Lemon Tree, Ginger inns and Zomato and has dispatched a social effect drive. The functioning conventions, working and observing system have been created, and the undertaking was declared on 30th March 2020 this is the Stay I @HOTELS.

Apollo Kavach

Services:

- ◆ Sanitised rooms
- ◆ Doorstep delivery of medicine
- ◆ Doorstep Sample collection
 - ◆ Free Wi- Fi
- ◆ Contactless Food delivery
- ◆ Virtual doctor Consultations and rounds

Apollo Kavach is a project which utilizes the poor performing hotel and hospitality industry and forms tie-ups with them to use their potential for providing the population with services which benefits both the population as well as the hospitality industry.

A visitor who needs to book a room under Stay-I needs to visit the site www.apollohospitals.com and fill out the structure. Visitors can likewise call the 24 I 7 helpline number 18605000202 to profit this office. After getting the subtleties, the Apollo Hospitals group would return to the visitor with booking confirmation and registration necessities inside 3 hrs.

RESEARCH QUESTION

An assessment of resource optimization by Apollo Kavach programme of Apollo Hospitals for utilizing hotel beds as a substitute to hospital beds for isolation services and providing medical facilities to patients with COVID 19 RT-PCR positive status in India during the pandemic.

1. What- Resource optimization and expansion of operations,
2. When- During COVID 19 Pandemic,
3. Who- By Apollo Hospitals for the COVID 19 RT-PCR Positive patients and contacts with asymptomatic status,
4. Where- Indian subcontinent specifically 8 major cities,
5. Why- To cope with the shortfall in bed counts when compared to the large population requiring medical facilities for managing COVID-19 disease and isolation.



WITH APOLLO,
NEVER BE ALONE,
EVEN IN ISOLATION

Stay-I at Hotel

Medically supervised rooms
starting at ₹1200 per day



Partner Models

Rationale

During the COVID-19 pandemic the hospitals are struggling to provide for medical in-patient services to patients flooding in with RT-PCR Positive status. The biggest challenge remains providing beds and isolation facilities to 'mild to moderately' symptomatic patients due to the humongous population of our county and when compared to the medical structure of the same turns out to be vastly insufficient. Thus in this period of struggle Apollo Hospitals has come up with a project utilising the back-end support of the Hospital facilities and the front-end support from the Apollo 24/7 online availability. In this a project was launched by the name Apollo Kavach, which utilizes the poor performing hotel and hospitality industry and forming tie-ups with them to use their potential for providing the population with services which benefits both the population as well as the hospitality industry for the greater good.

METHODOLOGY

The study was conducted at Apollo Hospitals Hyderabad which were supervising the following cities

<i>HYDERABAD</i>	<i>BENGALURU</i>	<i>MUMBAI</i>	<i>CHENNAI</i>
<i>NEW DELHI</i>	<i>PUNE</i>	<i>INDORE</i>	<i>GUWAHATI</i>

EXPANSION

Data collection was done using secondary data from the Kavach online tracker in a tabular format with following entities- City, Facility name, Room number, Room type, Guest Credentials, Date of entry, Date of exit and Number of days stayed.

Study Design:

1. Descriptive
2. Applied
3. Cross-sectional

Sampling

Technique:

1. Non-Probability
2. Convenience

Research Approach: Quantitative

LITERATURE REVIEW

Assessing healthcare capacity in India-

<https://www.mercatus.org/publications/covid-19-policy-brief-series/assessing-healthcare-capacity-india>

Author- Shruti Rajgopalan, Abishek Choutagunta

Date- 07-April-2020

Key findings- Given the way that India's private-area medical care framework has more ability to battle COVID-19 than government offices, India should depend on and boost reactions from the private area and common society.

This is best done by rapidly expanding the financial plans made accessible to battle COVID-19 and by eliminating bottlenecks.

Key words- India COVID-19 preparedness, India COVID-19 lockdown, public health, economics, quarantine, economy, economic crisis

Healthcare delivery in India amid the Covid-19 pandemic: Challenges and opportunities- **<https://ijme.in/articles/healthcare-delivery-in-india-amid-the-covid-19-pandemic-challenges-and-opportunities/?galley=html>**

Author- Pragati B Hebbar, Angel Sudha, Vivek Dsouza, Lathadevi Chilgod, Adhip Amin

Date- 31-May-2020

Key observations- Utilizing innovation for conference, further developing readiness, giving drugs at doorsteps, Streamlining travel during lockdown periods and Effective and straightforward correspondence.

Key words- Covid -19, Indian health system, OPD services, teleconsultation, lockdowns, ethical challenges, healthcare access, co-morbidities

Capacity-need gap in hospital resources for varying mitigation and containment strategies in India in the face of COVID-19 pandemic- **<https://www.sciencedirect.com/science/article/pii/S2468042720300415>**

Author- Veenapani Rajeev Verma ,Anuraag, Saini, Sumirtha Gandhi, Umakant Dash, Shaffi Fazal-u-din Koya

Date- Infectious Disease Modelling Volume 5 2020, Pages 608-621

Key findings- We figured the flood limit, which is controlled by direction of cases and foundation committed to COVID-19 patients by getting to the timeframe around which Indian medical clinics will confront genuine emergency as far as accessibility of beds and ventilators.

The report demonstrate that the Indian medical services framework is confronting a colossal shortfall as far as the accessibility of medical care foundation, particularly for serious and basic case. We processed the flood limit, which is controlled by direction of cases and framework devoted to COVID-19 patients by getting to the timeframe around which Indian medical clinics will confront genuine emergency as far as accessibility of beds and ventilators.

Key words- Capacity-need gap, Numerical model, COVID-19, PolicyIndia

Monitoring and Surveillance of COVID-19 Survival and Stay Characteristics: A Need for Hospital Preparedness in India-
<https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/article/monitoring-and-surveillance-of-covid19-survival-and-stay-characteristics-a-need-for-hospital-preparedness-in-india/075A402F2B9D85A6C4103B8B82976122>

Author- Ajit Deo Burma, Vinayak Mishra, Sumit Kumar Das, Mohana Balan Parivallal, Senthil Amudhan, Girish N. Rao

Date- 20-August-2020

Key findings- As the COVID-19 pandemic is advancing, the stay and endurance attributes may change in view of progress in infection qualities or change in affirmation/release models. Preferably, the prerequisite for clinic assets is arranged dependent on information from the nearby setting in light of the fact that the age structure, COVID-19 areas of interest, and medical clinic beds are not uniform the nation over

Key words- communicable disease, community health planning, hospital bed capacity, hospital records.

A Closer Look into Global Hospital Beds Capacity and Resource Shortages During the COVID-19 Pandemic-
<https://www.sciencedirect.com/science/article/pii/S002248042030812X>

Author- Brendon Sen-Crowe, Mason Sutherland BS, Mark McKenney, Adel Elkbuli

Date- 24-11-2020

Key findings- Global COVID-19 death rates are possible influenced by numerous components, including emergency clinic assets, staff, and bed limit. Higher pay districts of the world have more noteworthy ICU, intense consideration, and emergency clinic bed limits.

Receiving a layered basic consideration approach and focusing on the extension of room, staff, and supplies may serve to expand the nature of care during resurgences and future fiascos.

Key words- COVID-19, Bed capacity, Hospital resources, Global

Network-based Modelling of COVID-19 Dynamics: Early Pandemic Spread in India-
<https://www.medrxiv.org/content/10.1101/2021.03.16.21253772v1>

Author- Rupam Bhattachayya, Sayantan Banerjee, Shariq Mohammed, Veera Baladandayuthapani

Date- 16-03-2021

Key findings- The social texture comprises of broad family and cultural organizations. The test is thinking of prompt reactions, like fast lockdowns, that will lastingly affect numerous classes of society, particularly the metropolitan poor. What is required is a strong and manageable methodology, with local affectability and public availability. Pushing ahead, a system is required which makes India's thickness its benefit in managing COVID-19 and future pandemics..

Key words- Compartmental Modes, COVID-19, Forecasting, Network dynamics, Network Modelling.

Effects of the COVID-19 pandemic in India- An analysis of policy and technological interventions-
<https://www.sciencedirect.com/science/article/pii/S2211883720301465>

Author- Isha Goel, Seema Sharma, Smita Kashiramka

Date- Health Policy and Technology; Volume 10, Issue 1, March 2021, Pages 151-164

Key findings- The spread of COVID-19 in India was at first portrayed by less cases and low case casualty rates contrasted and numbers in many created nations, essentially because of a severe lockdown and a segment profit.

The monetary requirements constrained a stunned lockdown leave procedure, bringing about a spike in COVID-19 cases. This factor, combined with low spending on wellbeing as a level of total national output (GDP), made commotion due to insufficient quantities of clinic beds and ventilators and an absence of clinical faculty, particularly in the general wellbeing area

The J-IDEA Pandemic Planner- A Framework for Implementing Hospital Provision Interventions During the COVID-19 Pandemic-

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7610624/>

Author- Paula Christine, Josh D'Aeth, Alessandra Lossen, Ruth McCabe, Dheeya Rizmie, Nora Schmit, Shevanthi Nayagam, Marisa Miraldo, Paul Aylin, Alex Bottle, Pablo N. Perez-Guzman, Christl A. Donnelly, Azra C. Ghani, Neil M. Ferguson, Peter J. White, Katharina Hauck.
Date- P.M.C, U. S Library of Medicine Med Care, May 2021
Key findings- The consequences of the contextual analysis show that while field medical clinics ease the weight on the quantity of beds accessible, this intercession is purposeless except if the shortage of basic consideration attendants is tended to first.
Key words- COVID-19, hospital provision interventions, adult critical care, health systems capacity, pandemic response, hospital capacity, critical care.

Innovative ideas to sustain in Covid-19 lockdown-A case study-

<https://www.ipinnovative.com/media/journals/JManagResAnal-7-2-84-881.pdf>

Author- Ravitheja Jampani, Vasireddy Ysaswini
Date- Journal of Management Research and Analysis, April-June 2020
Key findings- The idea of private isolation wards to tackle lack of beds in hospitals with support from some of the hospitality providers is also a good innovative thought.
Key words- Covid-19 crisis, Survival in covid-19, Innovative ideas during covid-19, New jobs during Covid pandemic

Apollo Hospitals and Project Kavach: Insights from How India's Largest Private Health System Is Handling Covid-19-

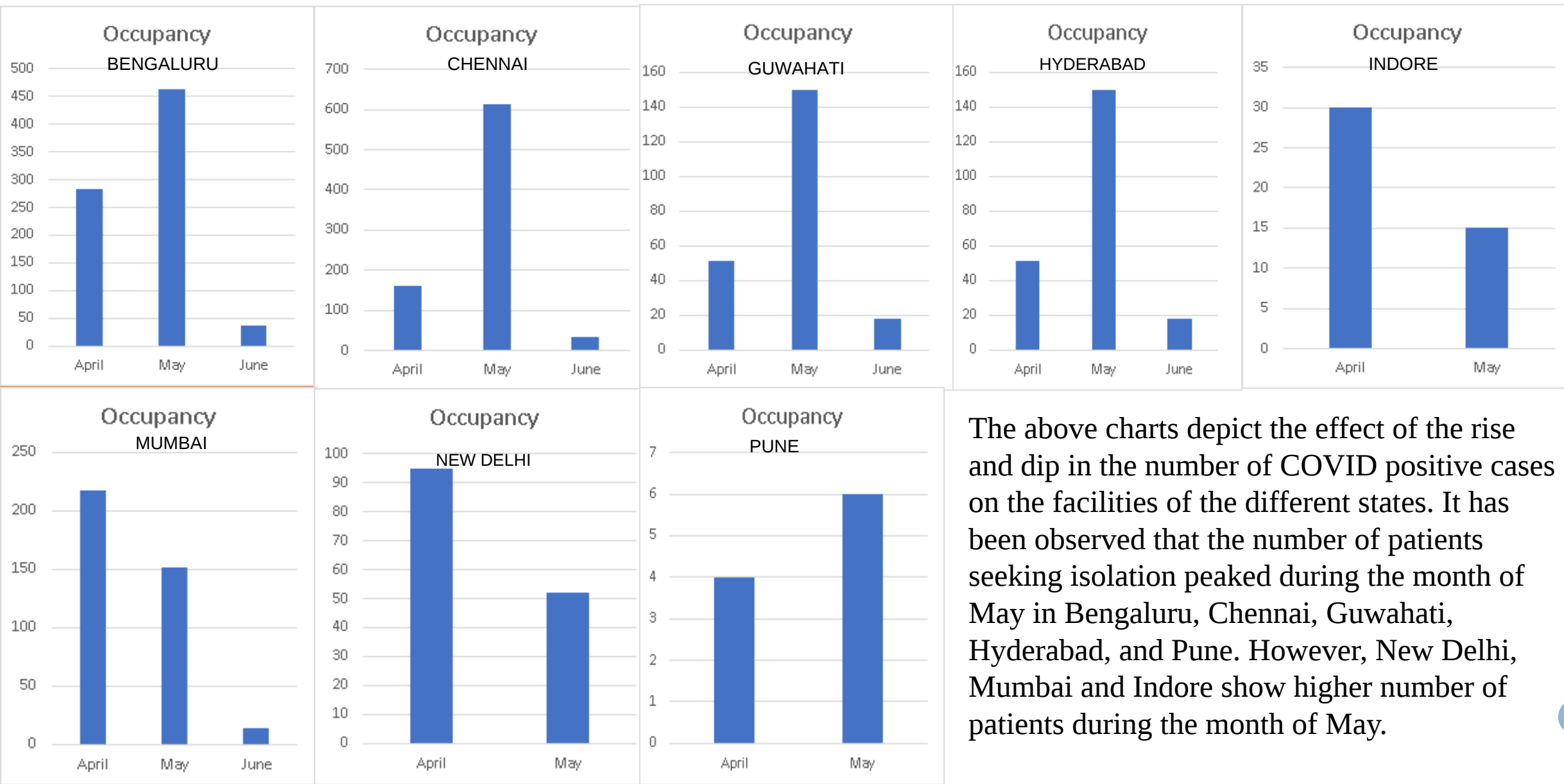
<https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0677>

Author- Anupam Sibal, Hari Prasad, Sangita Reddy, P. Murali Doraiswamy
Date- 24 February 2021
Key findings- Venture Kavach was intended to mediate proactively at each stage — identification, testing, segregation, and treatment — and was considered fruitful by and large. In the Apollo framework, 55,199 patients (6,081 in serious consideration units) have been treated for Covid-19, and the inpatient death rate has diminished from 3.02% (June–August 2020) to 2.38% (September–November 2020). While similar insights are not accessible to us from other Indian emergency clinics, these rates contrast well and those in Western countries.

A Systematic Review of Smartphone Applications Available for Corona Virus Disease 2019 (COVID19) and the Assessment of their Quality Using the Mobile Application Rating Scale (MARS)- **<http://hdl.handle.net/123456789/10796>**

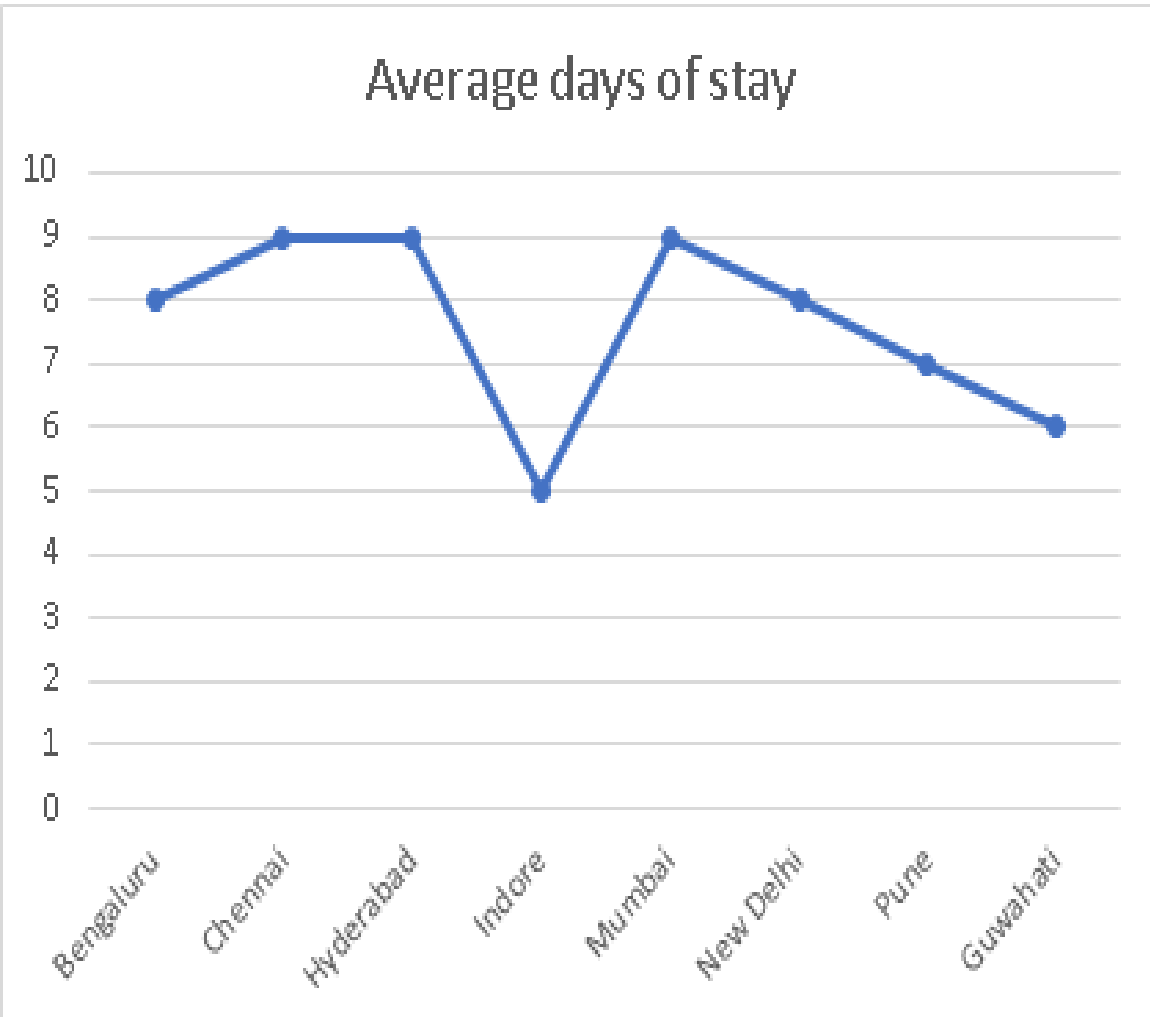
Author- Vikas Aggarwal, Durga Prasanna Mishra, Ashish Goel, Latika Gupta
Date- 2020
Key findings- Our pursuit recognized 63 applications that are presently being utilized for COVID-19. Of these, 25 were chosen from the Google play store and Apple App store in India, and 19 each from the UK and US. 18 applications were created for sharing exceptional data on COVID-19, and 8 were utilized for contact following while 9 applications showed highlights of both. On MARS Scale, generally scores went from 2.4 to 4.8 with applications scoring high in spaces of usefulness and lower in Engagement. Future advances ought to include creating and testing of versatile applications utilizing evaluation apparatuses like the MARS scale and the investigation of their effect on wellbeing practices and results.

Data Analysis & Interpretation- Occupancy Trends



The above charts depict the effect of the rise and dip in the number of COVID positive cases on the facilities of the different states. It has been observed that the number of patients seeking isolation peaked during the month of May in Bengaluru, Chennai, Guwahati, Hyderabad, and Pune. However, New Delhi, Mumbai and Indore show higher number of patients during the month of May.

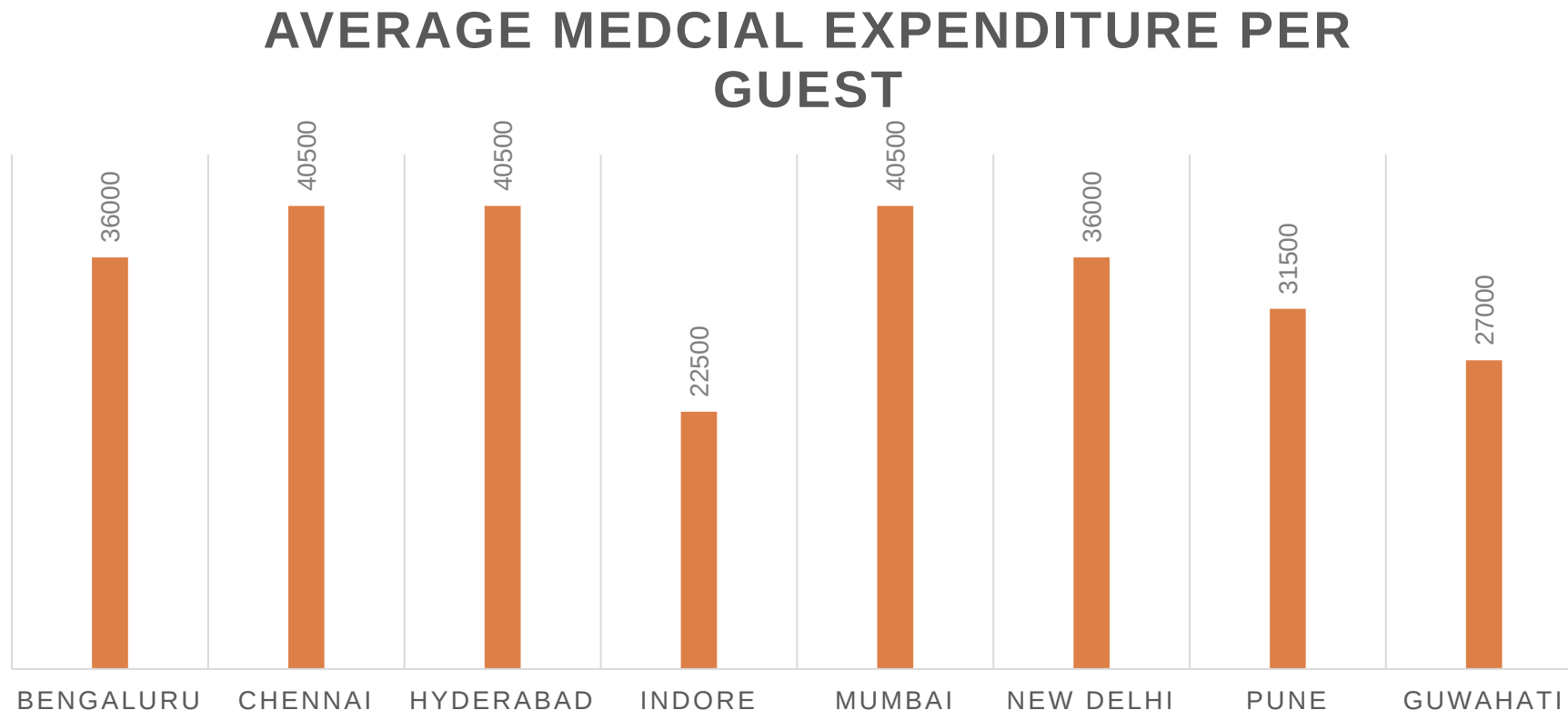
Data Analysis & Interpretation- Average number of days stayed



The average number of days the patients were seeking isolation was eight days in Bengaluru and New Delhi while Chennai, Hyderabad and Mumbai saw an average of 9 days. Patients in Indore, Guwahati and Pune were isolated for an average of five, six and seven days, respectively.

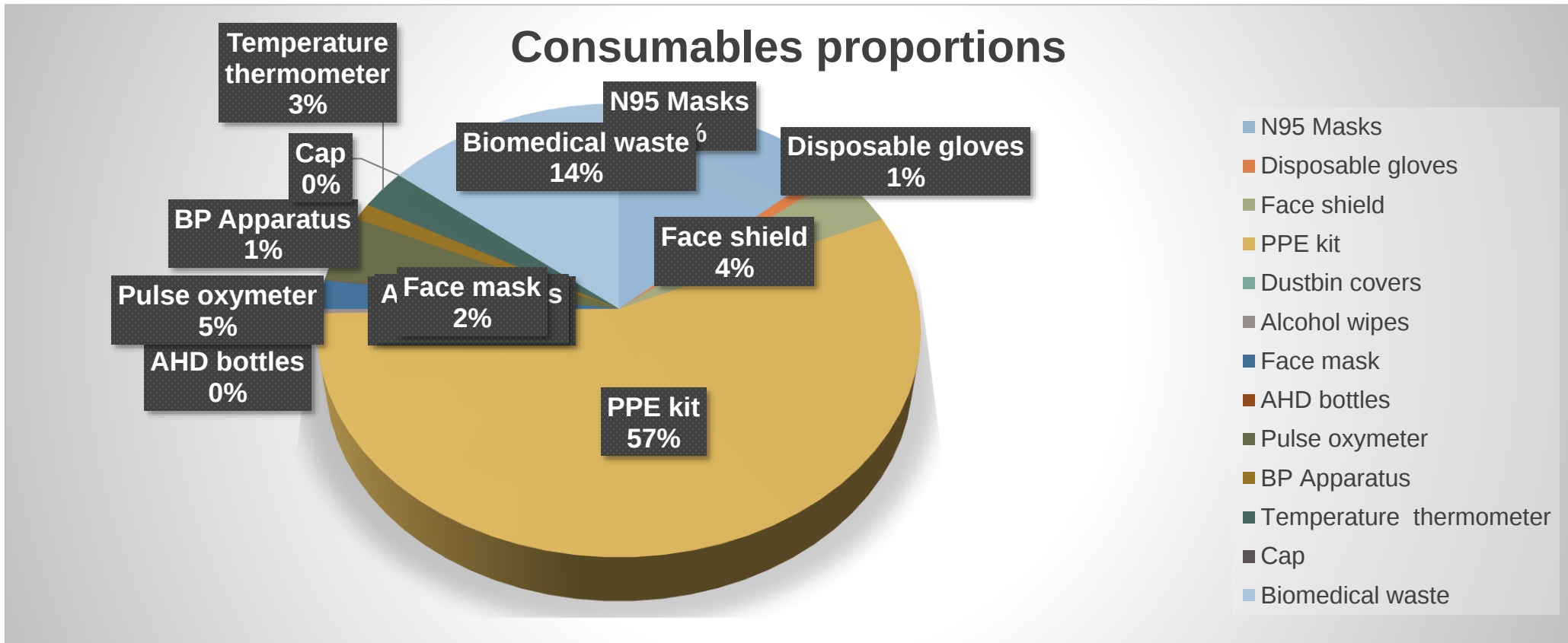
Data Analysis & Interpretation- Average medical expenditure for admissions

The revenue generation from the charged medical fees were highest from the cities of Mumbai, Hyderabad and followed by Chennai. Reason behind the higher generation is the higher number of rooms available in these cities by inclusion of more hotel facilities in those cities.

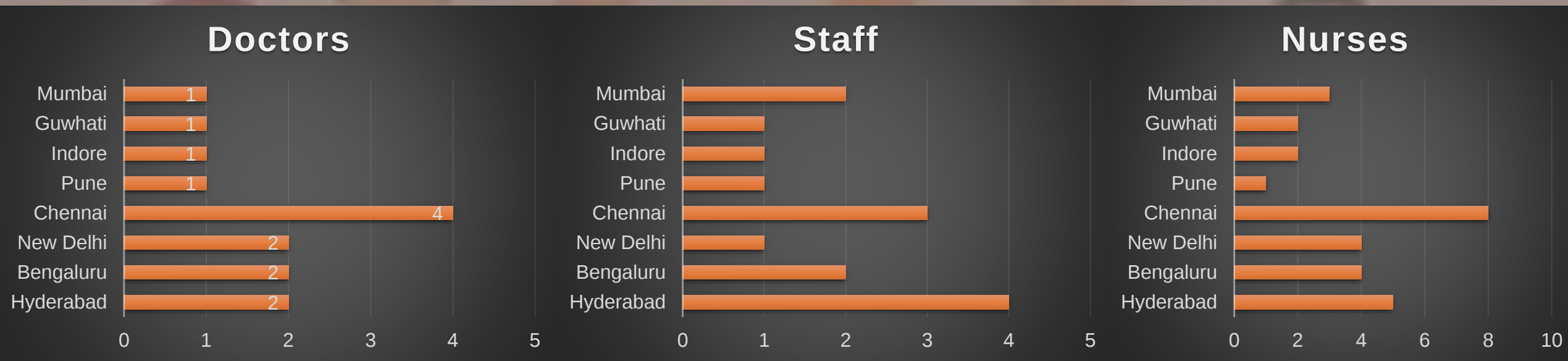


Data Analysis & Interpretation- Consumables Utilization

The Highest proportion allotted to the consumables was for PPEs which are essential for the medical staff on duty for interacting with the patients under isolation followed by the N95 Masks. This depicts the level of care provided for the human resources under the Apollo Kavach so that optimal results without absentees can be managed and the continual care can be provided.



THE RESULTS- Human resource optimization



A good example of human resource optimization in the city-wise count of Doctors, Staff and Nurses is displayed by Apollo Project Kavach. With a count of 1 doctor and 2 nurses per isolation facility helped managing the medical supervision services and providing optimal care with it.

Recommendations

- ❖ Being a new and innovative project from a hospital the initiation time for the project may vary from city to city as per the COVID-19 case findings. Thus, there must be a channel to incorporate more corporates- new and old through Memorandum of Understanding or using a addendum for already incorporated corporates will save some time.
- ❖ For outreach of the programme to general public was minimal; we saw maximum of the patients coming in from already tied up corporates. The Apollo 24I7 team must be able utilize the digital marketing platform for the masses and setting up strong channel for better search engine optimization which may include-
 1. Introducing indexing
 2. Improving snippets in search titles
 3. Adding structured markup for data
- ❖ The advised time for isolation by ICMR is 10 days from the day of contact or Positive RT-PCR report and discharged only with 3 consecutive days of afebrile condition. But the patients were discharges ranging from 1 day to 22 days. The lesser the day under isolation maximizes the risk of spreading and contracting COVID-19 disease. Therefore, a proper orientation must be provided to the patients/ guests under isolation so that they complete the minimum number of days as in the guidelines of ICMR.
- ❖ There must be availability of a feedback mechanism at the central operations to get details of services and facilities provided to the patients upon discharge. This will ensure the better performance if taken into concern in terms of Quality improvement and Patient care. As currently no feedback is taken and analysed within the stay facilities which came out to be the biggest reason of patients not willing to stay longer due to lack of services up to the general benchmark.
- ❖ Proper selection of candidates for the post of City-supervisors must be made, this will ensure a proper inflow and outflow of data from the hotel to the central operations and vice-versa respectively.

CONCLUSION

- Even though the project is in its adolescence stage it came up as a good example of Expanding operations, Optimizing resources and Profit maximization.
- The inclusion of a new project under the lead of Apollo Hospitals Enterprise Limited operated from the Apollo Hospitals, Apollo Health City Jubilee Hills, Hyderabad has opened of scope for further expansion of operations for medical facilities and services by utilizing already available infrastructure in the corporate field.
- The manner used to utilise the available provisions from the hospitals and providing them at the time of pandemic further enriches the quality of the services offered by the Apollo hospitals.
- This also includes the count of manpower brought in using contract basis employment and providing them with accommodation and other necessities on the facilities itself shows the importance given to the human resources from Apollo Hospitals.
- The revenue generated within this period was approximately Rs. 9,93,57,250.00 which in turn upon taking out the costs of hotel expenses (Rs. 6,66,44,000.00), Consumables (Rs. 25,51,478.00) and the cost of human resources (Rs. 62,55,000.00) returned the organization with an approximate profit of Rs. 2,39,06,772.00 which amounts to 32% of the revenue generated; this can be taken up as a profit maximization example for the project.

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THANK YOU!

