

# THE IMPACT OF COVID -19 ON HEALTHCARE SERVICES AND MANAGEMENT IN INDIA

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## ABSTRACT

### **Background**

*COVID -19 pandemic has impacted healthcare services all over the world. India is worstly affected nation. Their healthcare System and budget is not enough to cover come pandemic.*

### **Material and Method:**

*We have lots of information and reports about impact of COVID-19 pandemic on healthcare Services and management. Government and other agency's figure and analysis, media information, social media information with proof. Number of research paper, talks, webinar discussions are also considered. Who official website and Indian government website are important source at information*

### **Result:**

*In first phase (March 2020 to September 2020). Indian medical services were highly affected for non covid-19 patients. Medical services were unable to provide healthcare to routine and normal cases. In second Phase (March 2021 to June 2021) Indian Medical system was almost collapse for COVID-19 patients. All difficulties are discussed and important points and suggestion have been noted.*

### **KEYWORD:**

*Health care services, COVID -19 and non-COVID-19 patients. Government and non-government figures.*

### **Introduction:**

COVID-19 pandemic has created severe challenges to society. Health care System has suffered lot. The need for redesign system was challenging. Inadequate capacity, supply shortages, rumours on media, society approach toward disease and healthcare workers, transportation and financial losses are major challenges. An unwanted and surprize time as a COVID-19 pandemic cab be characterized in four major parts.

1. Complexity of its source
2. Speed of its spread
3. Its scale and impact
4. Mutation of SARS Patients

Continuous communication, collaboration and innovation need to be done this helps you in quickly in response to major surprises. Management and leadership are more than the science and technology. The balance between innovation and standardization is art of management.

As Long as just one positive visitor may practically cause viral out break a strict policy for visitor is also.

In Covid-19 Pandemic, first wave condition one can classify four types of patients.

1. Non COVID-19 OPD patients.
2. Non COVID-19 Hospitalized patient
3. COVID-19 Hospitalized patients
4. COVID-19 OPD patients (quarantine patient or symptomatic patients)

**Discussion: -**

First wave condition in April to Aug 2020 first two categories had serious problem. Almost all family physician has closed their hospital and private and corporate hospital may had half-facilities for Non-COVID-19 patients. During March to Dec 2020, 57% non-COVID-19 patients cancelled treatment, shows business today's survey (28 Jan 2021). They believed that their health condition had been negatively impacted.

India is thalassemia capital of the world. Thalassemia patient requires lifelong regular blood transfusions. During this period people won't come to donate blood because they may at risk of exposure to infections. Thalassemia patients and their relative had also same belief.

There was also shortage of blood for other kind of medical treatment and difficult to get especially for surgery.

**COVID-19 Test**

Early Phase of COVID-19 Pandemic, since SARS-CoV-2 is an RNA Virus, Viral genome needs to be transcribed in to a DNA Compliment by Reverse transcriptase. RT-PCR test were among the earliest available. In Initial Stage Government fix the rate for RT-PCR was 4500 Rs which was high for the poor and middle-income group. Letter on in May antigen and antibodies test was free to all citizens which has lack of sensitivity and not accurate, may be false.

COVID-19 test and isolation are important point in hospital management. There needs to be balance between the laboratory test, capacity and the member of requests for the tests while balancing those priority must be considered.

In initial stage of the pandemic, people are very panic for the test. Indian society has vast economical gap, a group could afford Rs 5000/- for the test while some one could not spend Rs 50

Rate of testing have been low (0.28 per 1000 people as of April 20) Misinformation about hospital and healthcare worker has created fear, Stigma, doubt and blame.

India's favour \* -young population (65 % < aged > 35)

About 20% of COVID -19 patients require hospitalization and 5% require admission to intensive care unit (ICU). they may have need of multispecialty care.

Challenges in the delivery of critical care in India during the COVID-19 pandemic

Journal of intensive care society august 28, 2020]

There is a public database of total ICU bed capacity. This shows heavy burden on healthcare System where 1 ICU bed is for 10 patients who required ICU bed.

It is impossible to satisfy the requirement. One more important thing is ventilators which they have very less compare to require and it is also qualities. Some of them are simply controlled pressure device not ventilators. Total number of doctors of intensive care trained in unknown and also train ICU nurse capacity is unknown. Recognizing the limited availability of train ICU staff, non-ICU staff has been deployed to ICU which capes huge problem with ventilator management and emergency drug management.

COVID-19 Waste (BMW):-

Improper management of COVID-19 Biomedical waste is a potential source of infection. The sudden rise in quality BMW was more challenging in India. Furthermore, lack of knowledge, poor in fracture, in adequate human resources and insufficient fund and its managements are major reasons. India is second most populated country.it is very difficult to manage BMW all-over the country. Hence India faces severe consequences during the COVID-19.

According to Supreme Court report, there is an increment in the quantity of BMW ranging from 25 to 349 tonnes/day during the month at May –July 20 and It is expected to have double during the month at AUG-OCT 20 and also insufficient safety measures for the BMW workers.

Municipal waste Management is not well organized. So many poor, unorganized and labour class worker are collecting waste from the society, gloves, bedsheets and PPE kit are collected. People also don't know how to handle hazardous COVID-19 waste hence they dispose to solid waste.

This condition is very dangerous because waste management worker haven't sufficient safety material and awareness. Only 12 state follows strict rules for BMW handling. As India is not managing BMW very well there may be large number of people infected by BMW. Throwing COVID-19 infected dead bodies to rever administration must take care of it.

### **Hospital at Home:-**

In Indian Subcontinent at peak of the COVID-19 pandemic, hospital at home is good concept. It can be used to hospitals for mild or moderate infected patient, it is safe convenient and efficacious care for selected home.

Patient care during hospital at home-treatment plan-included daily nurse visits (person to person, phone calls and video calls). Pathological laboratory test, oxygen saturation level, oxygen therapy (can act as a medicine) oral and IV during administration could be done for moderate COVID-19 patients.

Home delivery of medicine and medical equipment is also part of hospital at home concept. During this observation, if patient clinical test is required, medical staff could decide transferring patient to the hospital

The main purpose of HAH is isolation and Continuous observation though electronic platform. This concept may applicable to those patient who gets early discharge from hospital to evacuate hospital bed for another patients.

Though the meaning of HAH is different for different countries.

Remote monitoring for HAH

#### Vital and time to time monitoring

- Temperature
- Heart rate
- Respiratory rate
- Blood pressure
- Oxygen saturations
- diabetic level

Clinic systems:-

- Vomiting or diarrhoea
- Headache
- Pain with breathing
- Nemoptysis
- Shortness of breath
- Inability to perform activities of daily living

#### Discharge From Hospital to HAH

- (Patient) having a place to be safety.
- Afebrile and hemodynamically stable for 48 hour.
- Good oxygen saturation level to be maintain.
- Stable respiratory status.
- Ability to perform routines and to home self-isolation.

#### Requirements

For mild and moderate infected HAH and patient discharge from hospital to HAH.

- Quarantine for 7 days from hospital discharge.
- 14 days total since onset at disease.
- 3 day have passed without fever without use of antipyretics.
- COVID-19 test must be negative.
- Should not be breathing problem.

Essential COVID-19 drug supply in India

COVID -19 is virus disease not by Bactria so on antibiotics won't work against virus. Even though it is in short supply. One of the reasons is people of India is panic.

Protocol Drug:

1. Remdesivir 2. Enoxaparin 3.Methylprednisolone 4.Dexamethasone 5.Tocilizumab 6.Invermectin

Non Protocol drug widely used.

1. Favipiravir 2. Amphotericin3.apixaban.Published in Times of India with reference.

Even though India is called the "Pharmacy of the world" to acquire a couple of doses of medication for coronavirus, many stands for hours in long queue. According to economic Times only 30% people in a Delhi hospital in Delhi receive the medicine. Many have been resorting to the black market for the medicines. Duplicate or false drug market was also reported. Hon High court and Hon Supreme Court of India have interfered and ask for hospital beds and medicine and oxygen supply. Before the pandemic the total demand for medical Oxygen in the country was 700 tonne per day. Another hand in pandemic only Delhi Government alone asking for 700 tpd. According to Business standard liquid oxygen production increase four times.

### Suggestions:

1. Medical colleges and Hospitals must come together in the best interest of the patients and society as whole
2. Quick and rapid responses to questions and rumours in media by the hospitals but not by the political leader.
3. All meeting may held online for COVID -19 updates with research and analysis wings
4. Discard all used PPE in a double -bagged biohazard bag, which should then be securely sealed and labelled.
5. Use all breakfast, lunch and dinner plates and glass should be disposable and discard as PPE.
6. Disinfection of high touch surface like doorknobs, telephone, call bells strip stand, computer keyboard or mouse, bedrails, stair rails, light switches, toilet fitting and wall should be performed after every 4 hours.
7. Anything which is in direct touch with patient should be either disposal le or wiped with sanitizer.
8. Mop floor and wipe down all accessible surfaces with appropriate solution.

### Biggest Challenges

1. To protect physical and mental health of frontline healthcare staff
2. The composition of financial loss due to the cancellation of routine work.
3. This is novel SARS COV-2 may have COV-1 characteristic but not 100 % sure to redesign care system it needs multi climanation efforts.
4. Real time feedback of patients and their supports are badly needed.
5. Real time feedbacks and options of healthcare workers are badly needed.
6. Both 4 and 5 inputs must be synthesis and analysis at end of the day.
7. Transporting infected patient for the services.
8. Dealing with journalist and media
9. Watch yourself closely about your habits like rubbing eyes, touching leaps or nose so you can take appropriate protection.
10. Early-warning surveillance system for the general public may be implemented.
11. The hospitals can create an inventory of skill sets .That to facilitate cross-training and redevelopment of the staff.
12. Lack of sufficient data about BMW (COVID-19) and reports on BMW during COVID-19 exaggerates the problem further.
13. Collection of COVID-19 BMW from various centre is too difficult
14. Number of dead bodies increase in pandemic of cremation centre these have to handle train person but.
15. Majority of the hospital of family physician has not their pathological laboratories, collection such sample and transporting to lab is also big challenge.
16. Families and relatives of the patient must follow SIP for COVID-19. Many of them using mask just to avoid fine.
17. Social distance and sanitation are just for upper-class people. Majority people won't follow SIP.
18. Police and other law and order persons are not sufficient to enforce the SIP. Current system is also big hurdle in maintaining SIP.
19. Use of PPE guidelines should update and execute daily.

REFERANCE:

1. James w. Began, Joanna Jing healthcare Management During COVID-19. Insights from complexity science NEJM catalyst Oct 9 2020
2. Editorial  
India Under Covid-19 lockdown the lancet April 2020
3. Klompas M.  
Coronavirus deases 2019(COVID-2019): Protecting hospital from the invisible an intern Med Publish
4. Bharath Kumar Tirupakuzhi Vijay raghavn, shell Nainan Myatra, Meghena Mathew and etal.  
Challenges in the delivery of critical care in India during COVID-19 pandemic  
Journal of Intensive care society August 28,2020
5. M Answer, M. Faizan Solid waste management in India under COVID-19 pandemic: Challenges and Solutions  
Int I. Eng. Res. Technol. 9(2020) pp 368-373,06
6. Sharad Chand, C.S Shastri, Shivakumar Hiremath, Juno J. and etal  
Updated on biomedical waste management during COVID-19: India Scenario  
Clinical Epidemiology and Global health  
Vol.II, July -September 2021 100715 J
7. Pratyush singh  
Non -COVID-19 Patients are paying the price of India’s efforts against the coronavirus science wire 3/5/2020
8. Olivier Vandenberg, Delphin Martiny, Oliver rochas, alex van belkum and zisi Kozlakiclis  
Consideration for COVID-19 tests nature reviews microbiology 19,171-185 (2021)

FIGURE: 1

Effectiveness of Indian health care System before COVID-19 pandemic

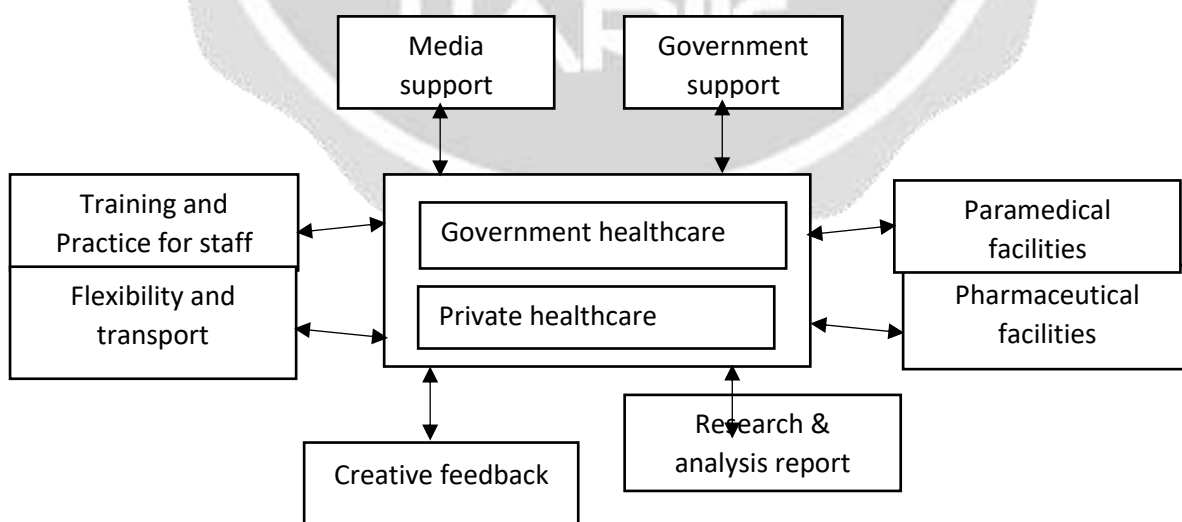




Table -1

Environment Cleaning and Disinfection of room

	COVID-19 Patient's room		Non COVID-19 patient's room	
	Cleaning Procedure	Duration Frequency	Cleaning Procedure	Duration Frequency
All high-touch surfaced	-: Curtain /fabrics quilts  -: All surfaces like Window ,door furniture, medical fitting	-: detergent or bleach in hot water 80° for 25 Minutes -: 1% hypochlorite OR 70% alcohol. After every two hours	:- surface which is direct contact to patients	-: 1% hypochlorite OR 70% alcohol. After every four hours
Non high-touch surfaced	-: Wall ,room furniture TV sets All other non-touch surface	-: 1% hypochlorite OR 70% alcohol. After every four hours	:- surface which is direct contact to patients	-:Normal wash with detergent OR surface cleaner  :- after every shift change

Table -2 Patients with following symptom should advice for RT-PCR

Primary Symptoms	
<b>Common</b> <ul style="list-style-type: none"> <li>• Fever -(77-98)%</li> <li>• Cough-(46-82)%</li> <li>• Myalgia(11-52)%</li> <li>• Daypnea (31%)</li> <li>• Headache(50-72)%</li> </ul> <b>Non-Common</b> <ul style="list-style-type: none"> <li>• Sore throat</li> <li>• Vomiting</li> <li>• Diaries</li> <li>• Dysgeusia</li> <li>• Sputum</li> <li>• Rhinorrhoea</li> <li>• Nausea</li> <li>• Anosmia</li> <li>• Haemoptysis</li> </ul>	<ul style="list-style-type: none"> <li>• These test should be done eigher outside the hospital premises or at ground floor isolated room.</li> <li>• All patient may not have such test due to shortage of such test kit</li> </ul>

Table: For COVID-19 Positive Patients Common Laboratory Finding

CBC

- Lymphopenia (63%)
- Leucocytosis (24-30%)
- Leukopenia (9-25%)

Coagulation:

- D-dimer ↑
- PT ↑

LETs

- AST,ALT↑
- LDH ↑

All these tests for the primary finding as per clinical more test may reaccommodate by the specialist

