



## **Telemedicine in Covid-19: Challenges and Opportunities**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author IM designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors UB and N managed the analyses of the study. Author N managed the literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

The pandemic of COVID -19 is a healthcare emergency of International concern. It originated in Wuhan, China in December 2019 and was declared as pandemic by WHO on 12 March 2020. Since then it is raging relentlessly across the world with staggering more than 60 lakh cases in India currently. This has put a tremendous strain on already frail and overburdened Indian healthcare system and aggravated concern in the accessibility to healthcare by common mass due to prevailing lockdown conditions. This has sparked to re-think and renew the policy on healthcare and focus on relevance, reach and utilize the potential of telemedicine services for the delivery of healthcare to community. This term telemedicine has been in use since 1970s but became fully operational globally in early 2000. Now about 20 years later we find a revolutionary change in the focus of health services delivery towards community healthcare and wellbeing In this article we aim to analyze the difficulties and hurdles faced by non COVID patients and challenges in front of the government to dispense basic healthcare to those in need. We need to tap all our resources

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particularly ICT for healthcare delivery and use this adversity of COVID 19 pandemic as an opportunity to build on our capacity and expertise in the area of Telemedicine for the betterment of community healthcare.

*Keywords: Telemedicine; COVID-19 pandemic.*

## 1. INTRODUCTION

The world is experiencing once in a lifetime pandemic, causing untold suffering and death, unraveling of social relationships and robbing individuals of their livelihoods and countries of prosperity [1]. The COVID pandemic has strained health care systems, revealed inequalities in the social system and also stirred relations between international institutions. Here are some important lessons we need to learn

We need strong leadership and public trust for getting success in healthcare because this COVID 19 pandemic has laid bare the gaping holes in our existing healthcare infrastructure, even developed countries have fared badly in tackling this health crisis of COVID 19. With more than 5 million cases, the most COVID 19 cases and deaths globally more than 2 million, Brazil, Spain and UK are the hardest hit countries [2]. This has taught us that leadership is crucial. Only financial strength of the country is not enough but population based health behavior, better hygiene practices, maintaining social distance, use of face mask can reduce community spread of novel Coronavirus as justified by research. This is the right time to invest country' economy in biomedical research and development. The integrity of science is essential and government must design policies and invest in the country's biomedical research and development not only during a health crisis but during inter pandemic period as well. In view of this pandemic looming large over the world since the end of 2019 and extending beyond 2020, WHO has given R&D Blueprint for COVID 19 to undertake essential measures to develop safe and effective therapeutics and vaccines [3].

The COVID pandemic has exposed and aggravated the glaring social, economic and health inequalities including access to health care and has disproportionately affected socially and economic backward classes like laborers, migrant workers, unskilled workers while many white collar secure income individuals could afford to work remotely while many lower rung workers lost their jobs.

Challenges and difficulties faced by non COVID patients in access to health care in current scenario.

During this global pandemic telehealth has emerged as an effective and useful solution for prevention and treatment to curb the spread of covid 19 and has bridge the gap between health providers and community enabling everyone especially symptomatic patients to stay at home and communicate with physician through virtual channels thereby helping to reduce the spread of virus to the masses including medical staff.

The renewed focus on telehealth during the crisis has helped to cut down the unnecessary exposure of the health care staff and has also helped to keep non covid patients with chronic illnesses safe as they can have access to medical health care without entering hospitals and appropriate measures can be taken to minimize this risk by prescreening of symptomatic patients. It also saves time of both patients and their physicians [4,5]

There should be a functional telemedicine unit in the Clinical Department where patients can have consultations with doctors or specialists as the current situation of prevailing COVID pandemic has adversely affected access of patients to healthcare [6]. There are restrictions on travel, fear of getting affected while travelling by public transport, so there is a need to set up a telemedicine unit with a dedicated online consultation and advisory team of doctors and paramedics for patients consultations. This term telemedicine was first use in 1970s but became fully operational around the world in the early 2000. Now about 20 years later we find a revolutionary change in the focus of health services delivery towards community healthcare and wellbeing. This setting up a telemedicine unit is difficult as there is a lack of experts in healthcare sector and most of the doctors are not aware about the nuances of modern technology and find difficulty in use of modern gadgets [7,8]. There is also a lack of proper institutional training programs in the course curriculum of doctors as well as paramedical staff, so this apprehension and fear towards telemedicine can be allayed by

providing knowledge about it as it is a hybrid system which involves the medical as well as ICT domain for complete understanding of telemedicine solutions and its delivery. It is also a common fact that many provider physicians and clients cannot fix the technical problems arising from computer and ICT networks so for its proper functioning there is a need to train manpower to provide consistent communication during Tele-consultation.

The several advantages of telemedicine includes its potential in reaching out to multiple specialities helping to overcome the issue of scarcity of qualified doctors accessible to the patients but there are pertinent issues with adoption of technical resources in various part of the country as well as medical and legal issues with security of patient data, difficulty and challenges in physical examination of the patient, financial constraints but continuing workup on telehealth resources will help to incorporate and implement telemedicine services into the health care sector, so as to prepare ourselves for any novel outbreaks in future [9].

There are many serious barriers in the execution of this plan as ICT equipment like hardware and software becomes obsolete and may become non-functional and people providing them become demotivated and the government also finds it difficult to replace due to budget constraints.

There are 3 players in telemedicine that are physicians as service providers, IT industry as supplier of technology and public as users. As we are seeing, healthcare in developing countries is going through a paradigm shift from traditional provider centric disease oriented approach to patient centric health

We need a structured, organized and resilient health system to detect, analyze and respond to new or novel outbreaks in future. The international health regulations which govern pandemic response require all countries to invest in basic health system capacities like surveillance, laboratories, human resources and risk communication so that health systems are better equipped to test, diagnose and treat infectious diseases management model. There are also many success stories where telemedicine is an important tool in achieving healthcare coordination and reducing disparities<sup>6</sup>. Telemedicine is yet to become an integral part of the healthcare system and now is

the time to take telemedicine from pilot mode to routine operational mode in the delivery of mainstream health services. Government is already under tremendous pressure to provide accessible, affordable and quality health care to its people and there is great need for alternative and innovative methods like telemedicine to bridge this gap and work towards removing hurdles for its development and implementation across the globe for the welfare of humanity as telemedicine has potential to play the bridging role in overcoming these infrastructural challenges. India has launched the telemedicine guidelines recently, in earlier times also telemedicine has been used during natural disasters but its proper integration into mainstream healthcare system and successful implementation is still limited. There has been a renewed focus on development of easy to use mobile applications for citizens in these COVID - 19 pandemic times such as Aarogya Setu app for real time update and contact tracing of cases. In the long run this will modify the health seeking behavior of Indians and empower them in access to healthcare and at the same time it will be a meaningful contribution to making Indian health care system digitalized [10].

## 2. CONCLUSION

The current Covid19 pandemic has effected the diagnosis, management strategies and long term management of diseases. This has undoubtedly revealed an important role of telemedicine in covid and beyond but further research is needed in the assessment of telehealth resources, in overcoming the existing barriers to the implementation in the health care system in terms of building resilient health sector and its broader implementation in society will help to accelerate its adoption by the masses but we need to look at the regulation and reimbursement policies for its effective incorporation in the health care sector.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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