Telephonic Triage in Times of COVID-19

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Submitted to: JMIR Public Health and Surveillance
on: April 07, 2020

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Abstract

Telemedicine, which came into existence in its organized form in the late 1950s and promised to be at the forefront of the future of medicine, has not achieved the estimated success yet. It makes state-of-the-art healthcare highly accessible for everyone. However, the reality is that the concept has been adopted by only a handful of nations and for many of them, it has remained merely as a concept. This can be attributed to the lack of proper supportive infrastructure and awareness, reimbursement issues and legal restrictions. The ongoing global health crisis of COVID-19 has forced the regulatory bodies and healthcare providers to look for alternative healthcare service delivery modes and, telemedicine is being considered more and more as an ideal solution. In a state of complete lockdown, it allows remote consultation without any face-to-face contact, thus preventing any unnecessary exposure to an infection. Various national bodies and organizations such as The Academy of Family Physicians and the American Medical Association (AMA), besides the government of different nations including India, have released relevant telemedicine guidelines. It is a readily available solution especially for individuals on chronic medications for non-communicable diseases in addition to filtering out potential COVID-19 cases remotely. The pandemic has brought telemedicine into the limelight and it is the right time to strengthen the framework and incorporate additional features and services to make it disaster-ready for all times. Various aspects and opinions about the future of telemedicine and telehealth have been put forward here pivoting around the experiences at a telemedicine center in India. Can telemedicine have a significant impact on R-naught (R0) by cutting its right-side tail and pushing it below 1, thus contributing to the flattening of the COVID-19 curve? Our fight against public health crises in the future would rest a lot on this answer.

(JMIR Preprints 07/04/2020:19185)
DOI: https://doi.org/10.2196/preprints.19185

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Running title: Telemedicine and COVID-19

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Abstract

Telemedicine, which came into existence in its organized form in the late 1950s and promised to be at the forefront of the future of medicine, has not achieved the estimated success yet. It makes state-of-the-art healthcare highly accessible for everyone. However, the reality is that the concept has been adopted by only a handful of nations and for many of them, it has remained merely as a concept. This can be attributed to the lack of proper supportive infrastructure and awareness, reimbursement issues and legal restrictions. The ongoing global health crisis of COVID-19 has forced the regulatory bodies and healthcare providers to look for alternative healthcare service delivery modes and, telemedicine is being considered more and more as an ideal solution. In a state of complete lockdown, it allows remote consultation without any face-to-face contact, thus preventing any unnecessary exposure to an infection. Various national bodies and organizations such as The

Academy of Family Physicians and the American Medical Association (AMA), besides the government of different nations including India, have released relevant telemedicine guidelines. It is a readily available solution especially for individuals on chronic medications for non-communicable diseases in addition to filtering out potential COVID-19 cases remotely. The pandemic has brought telemedicine into the limelight and it is the right time to strengthen the framework and incorporate additional features and services to make it disaster-ready for all times. Various aspects and opinions about the future of telemedicine and telehealth have been put forward here pivoting around the experiences at a telemedicine center in India. Can telemedicine have a significant impact on R-naught (R0) by cutting its right-side tail and pushing it below 1, thus contributing to the flattening of the COVID-19 curve? Our fight against public health crises in the future would rest a lot on this answer.

Keywords

telemedicine; COVID-19; telephonic triage; telehealth; public health; pandemic; surveillance

Introduction

The rapid spread and upsurge in the number of people affected with COVID-19 has diverted our attention from traditional healthcare delivery systems to alternative models for providing medical care. In the *Interim Guidance for Healthcare Facilities: Preparing for Community Transmission of COVID-19 in the United States*,[1] the Centers for Disease Control and Prevention (CDC) has asked the United States of America to explore alternatives to face-to-face triage and visits. Telemedicine and telehealth could play a major role in combating this public health problem of such magnitude. Total number of cases in the world, as on 6 April 2020 at 07:00 PM IST, are 1,288,372 (Deaths: 70,482), while that in India are 4314 (Deaths: 118). [2]

First-hand Experience at a Telemedicine Center

At All India Institute of Medical Sciences (AIIMS) Bhopal, India, the Telemedicine center has been

assigned the task to receive calls over a toll-free number 24x7. In wake of the pandemic, anticipating the role that telemedicine could play, more telephone lines have been opened, and resident doctors have been deployed at the Telemedicine center to do “telephonic triage” and assess the severity of complaints.

We have been allocated the task of IEC, i.e. information, education and communication and our responsibilities at telemedicine center fall under its umbrella. IEC can be defined as a “concentrated pre-planned educational endeavour with specific objectives, focussed towards specific programme goals in order to reach specific audience either in individual, or group settings through skilful use of proper methods and media”.[3]

We are following the guidelines as regularly updated by Indian Council of Medical Research (ICMR), the apex medical research body of the country, and Ministry of Health and Family Welfare (MoHFW) to categorise and prioritize patients.[4]

Some of the key features based on which people are being called to the SARS-CoV-2 testing facility are[5]-

1. All symptomatic contacts of laboratory confirmed COVID-19 cases.
2. All symptomatic health care workers.
3. All symptomatic individuals with a history of international and/or domestic travels from recognized national hotspots.
4. Asymptomatic direct and high-risk contacts of a confirmed case who are in between day 5 and day 14 of coming in his/her contact.
5. Asymptomatic healthcare workers who examined a confirmed case without adequate protection as per WHO recommendation

All asymptomatic individuals who have undertaken international travel or travel from any of the domestic hotspots in the last 14 days are being advised home quarantine for two weeks with proper explanation of what precautions need to be taken.

Some of the mandatory details that are being asked over phone are- (the telephone number gets uploaded automatically along with the generation of a unique ID for tracing the details later)

1. Name of the caller
2. Age
3. Gender
4. Relationship of the caller with the patient
5. Chief complaints
6. Address

In case of any recent travel history, travel details of the patient are being asked regarding-

- Date of arrival to India or to the city in case of domestic travel
- Mode of travel
- Country/place from which the person has travelled
- Date of occurrence of symptoms
- History of contact with a lab-confirmed case or a suspected COVID-19 person
- Severity of symptoms
- Any comorbidities

We are mainly trying to assess whether the patient needs to be called for testing based on the above criteria and hence, decrease the unnecessary number of people wating in the queue to get tested. With the help of this telephonic triage, it would be possible to curtail the footfall, and hence reduce the non-essential face-to-face interactions. Besides, it ensures the optimization of testing reagents which are highly limited in quantity and availability.

We are following the telehealth model right now. This model is based on the robustness and accuracy of information available to the team, hence contact information of all the nodal points such as screening area, Ambulatory Emergent Care center or AEC (the out-patient department registration area is now designated as AEC) etc are being provided on request.

Some of the key enquiries that we have received so far are-

1. Advice regarding continuation of ongoing treatment for chronic diseases
2. Advice regarding any incoming family members who have travelled from abroad or domestic hotspots- need for quarantine or testing or precautionary measures that they should take
3. Asymptomatic patients calling and mentioning their international travel history - advice regarding need for testing
4. Advice regarding prophylactic measures (medications, diet etc)
5. Whether medicines are available in pharmacy stores in the state of lockdown
6. To know about the virus- mode of spread and general symptoms of the disease
7. Apprehension regarding neighbours who have travel history
8. Family members of suspected patients asking for the status of report of COVID-19 testing
9. Whether emergency services at the hospital are running or not
10. Patients having prior appointments for radiotherapy or radiology imaging or OPD visit, asking for their next appointment dates

A person who has mild to moderate symptoms of acute respiratory illness (ARI) can easily call up and consult a physician over the phone. This not only hastens the process of identifying a probable COVID-19 positive patient but also decreases the risk of exposure of the healthcare workers (HCWs), and hence, prevents hospitals from becoming secondary epicenters. Further, if HCWs on "COVID-19 duty" i.e., involved in screening for this viral illness as well as in the care of COVID-19 positive patients, are in quarantine after their duty is over, they can still provide consultation over phone.

After proper assessment through detailed history taking over the phone, reassuring the callers that their symptoms are not suggestive of COVID-19 also helps them a lot psychologically. At times like this, lot of fake news and myths float about, especially in the social media. The World Health Organisation (WHO) has also released information on myth busters and advice to the public on

COVID-19 which includes answers to some of the common queries.[6] Dissemination of proper information such as when to wear a mask and educating the callers regarding the signs and symptoms of COVID-19 is much needed to prevent any sort of panic and convey the importance of staying at home and social distancing.

Tele-prescribing

The release of telemedicine and telehealth guidelines by the MoHFW on 25 March, 2020 amidst the COVID-19 threat goes on to show that the Indian government considers it as one of the important tools to combat the situation.[4] The guidelines proposed 10 years ago have been finally sanctioned to cope with the Covid-19 outbreak. They also enlist the categories of medicines that can be prescribed via telemedicine consultation. There are three lists, which are as follows-

List O: Common over-the counter medications which are safe to be prescribed through any mode of tele-consultation.

List A: First Consult Medications (Diagnosis done on video mode of consultation) and are being re-prescribed for re-fill, in case of follow-up.

List B: Medications prescribed as ‘Add-on’ on follow-up, to ongoing chronic medications which have been prescribed during in-person consult for the same medical condition.

At our telemedicine center, resident doctors are currently tele-prescribing, based on national treatment guidelines, only “List O” medicines. We have formulated our own algorithm to ask questions to the callers and advise them accordingly. This is providing great assurance and comfort to the patients in these difficult times.

We have also been assigned the task to make calls to people all over the state who have been home-quarantined because of their international/domestic travel history. They are being asked about their medical complaints, if any, in which case, they are advised to visit the nearest dedicated COVID-19 healthcare facility for further evaluation and management.

Telehealth Preparedness Instead of Playing Catch-up

In trying to contain the pandemic, “Telehealth preparedness” should be stressed upon rather than “playing catch-up”. It should be made a regular part of the hospital setting and can be used as the first mode of consultation for any infectious diseases including seasonal flu. Occasional “pandemic/epidemic outbreak” mock-drills should be conducted for quality check and to find the shortcomings in the system.

In the current scenario, those seeking general advice and information about corona should be directed to a website or a pre-recorded message or Interactive Voice Response System (IVRS). This will help to reduce the waiting time of the calls at the busy hours of the day. Video triaging is one more of such measures which could be adopted. This would help us assess the severity of the symptoms with the help of visual cues and prevent the visit of a patient who does not require any testing. For this, the caller needs to use a mobile phone with a camera and the telemedicine center should have a webcam attached with their computers. In that case, List A medicines as per MoHFW guidelines can be tele-prescribed too.[3] Although the human touch is lost, this would be a humane decision in times like this.

If we can perform well and as per the expectation at times like this, then it would increase the general trust and belief of the people on telemedicine; more people would be adopting it in their regular medical consultations, especially for the non-communicable diseases. This would help fight more of such epidemics and pandemics efficiently.

Amendments to the national disaster response policies and procedures must be made, in order to incorporate telemedicine systems to mitigate some of the atypical challenges posed by infectious disease outbreaks such as COVID-19. More power and responsibility along with proper designated staff and equipment to the department of telemedicine is one of the most pressing needs today, when health care systems are at the verge of collapse in many countries. Nevertheless, legal and regulatory

issues such as multi-jurisdictional licensure, reimbursement for services, etc. should be accommodated to ensure smooth functioning.

Pandemics would occur in the future as well. It is the right time to harness the potential of telehealth and start leveraging its benefits in a period of social distancing. To make the most of it, telemedicine can be integrated with digital technologies (Internet of Things) such as a smart thermometer (which could be linked to a mobile application) or a microphone to record and amplify the breath and cardiac sounds, so that remote care and surveillance of patients and suspects could be provided.

Conclusion

Telemedicine could prove to be a mighty tool in flattening the curve of transmission of SARS-CoV-2. We just need to take appropriate steps to make the learning curve steeper (*Figure 1*) in order to incorporate telemedicine as a frontline warrior in our fight against this dreadful pandemic.

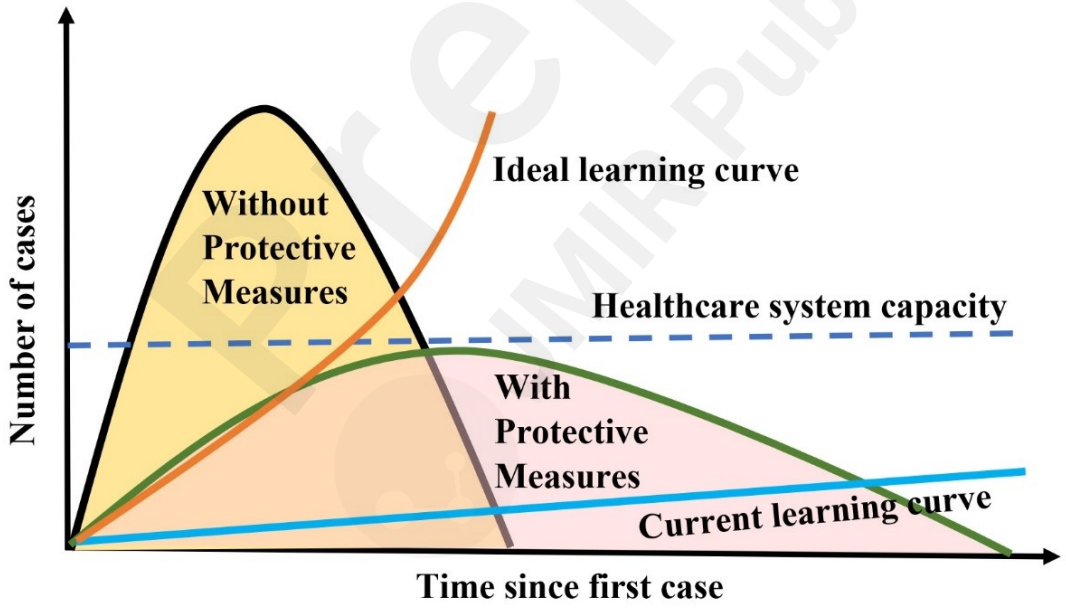

Figure 1. Hypothetical impact of a steeper learning curve of telemedicine and telehealth on flattening the epidemiological curve. The blue solid line represents the current learning curve (hypothetical) while our target should be to achieve the ideal learning curve (as depicted by the orange solid curve). This might help us to supplement the protective measures and flatten out the

curve even more quickly.

Conflicts of Interest

None declared.

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Abbreviations

COVID-19: coronavirus disease 2019
IEC: information, education and communication
SARS-CoV-2: severe acute respiratory syndrome coronavirus 2
MoHFW: Ministry of Health and Family Welfare
ICMR: Indian Council of Medical Research

Supplementary Files

Figures

Hypothetical impact of a steeper learning curve of telemedicine and telehealth on flattening the epidemiological curve. The blue solid line represents the current learning curve (hypothetical) while our target should be to achieve the ideal learning curve (as depicted by the orange solid curve). This might help us to supplement the protective measures and flatten out the curve even more quickly.