

Telemedicine: a new normal in COVID era; perspective from a developing nation

The two most significant innovations, namely computing technology and the internet, have revolutionised every sphere of life. Pocket-sized smart devices of today can perform a lot more and a lot faster than much larger devices of 30–40 years ago. Using one such smart device, products and services can be ordered to arrive at the doorstep, even in the remotest areas.

Telehealth (TH) is a broad term that encompasses all components and activities of healthcare and the healthcare system, which are conducted through telecommunications technology. Telemedicine (TM) is a component of TH and is defined by Oxford's as 'the remote diagnosis and treatment of patients by means of telecommunications technology'.¹ TM focuses on overcoming the barrier of distance separating the participants, making it ideal for COVID consultations. Interestingly, the world's first telephone call, made by Alexander Graham Bell on 10 March 1876, was effectively a request for medical help.

TM provides remote electronic consultations (ECs) to patients, assessment of records and reports, and prescription of treatment. Direct-to-consumer or on-demand TM, a rarely used approach in the before-corona era, is now rapidly gaining acceptance from patients and practitioners alike. Because of its resonance with the concept of physical distancing, TM is quickly becoming the 'new normal', and will likely remain so even in the post-pandemic period.

In a recent correspondence to this journal, Iyengar and colleagues elucidated the applications of TM in orthopaedic care and its suitability during the COVID-19 pandemic.² Adding to their perspectives, we present some reasons why TM could be an impeccable fit for the present pandemic, especially in a developing country with a large and diverse population; a majority of which resides in difficult to reach areas.

ABATING THE RISK OF TOO MANY ON ONE BOAT

The highly infectious nature of the COVID-19 makes hospitals a fertile ground for disease transmission and propagation to other patients. Presently, people visiting hospitals are at risk to acquire the infection from admitted or visiting patients. Further, a majority of patients with COVID-19

have minimal or no symptoms, and do not require in-hospital care. They do, however, need to be isolated at home and closely followed-up for clinical worsening. ECs can achieve symptom screening, medical advising and routine follow-up—all without the risk of disease propagation, simultaneously alleviating the patient's anxiety.

BREAKING THE BARRIER OF DISTANCE

More than 68% of India's population resides in distant rural, tribal or hilly areas. Such areas form a large unmet gap of COVID-19 screening and early diagnosis. TM can easily fill this unmet gap. A single room facility, with audiovisual components connected wirelessly to a central healthcare network, can be quickly built upon the existing peripheral health system; for instance, in an existing 'anganwadi' (village-level health centre in India). Using a computer tablet connected to the internet via existing cellular communication networks, ECs can be held with doctors hundreds of kilometres away. Patients requiring investigations or hospital admissions can be easily identified and transported by state-sponsored means. Health education about preventive measures can also be disseminated to relatives and others. All these can further decrease disease transmission. Further, the benefit of identifying non-COVID-19 illnesses, which might be otherwise ignored by non-sensitised patients, cannot be overstated.

LOOKING BEFORE THEY LEAP

Perhaps the greatest value of TM lies in the close follow-up of at-home patients, COVID-19 or otherwise, aka. remote patient monitoring (RPM). As soon as clinical deterioration is suspected, these patients can be brought to the hospital in transport vehicles designed to reduce transmission. Objective parameters including pulse rate, blood pressure, temperature and saturation of oxygen (SpO₂) can be recorded and made available via RPM. The latest classification of severity of COVID-19 is based primarily on SpO₂ and respiratory rate, which can be easily monitored using TM. Further, 'forward-triage' can be used as a strategy to tackle the surge in patient numbers. Sorting can be done even before patients arrive at the hospital, further decreasing the risk of transmission. Patients identified as non-COVID-19 can be taken directly to a designated area of a hospital, or even to a non-COVID-19 facility. Another advantage of TM is the availability of patient data. This can save crucial time in the emergency room. National health ministry guidelines in India recommend downloading 'Aarogya

Setu',³ a mobile application, for monitoring; and symptom- and time-based risk assessment.

PENNY SAVED IS A PENNY EARNED

Another merit of ECs is about the people who are contralateral to patients, across the electronic screen. Healthcare professionals are precious resources during a pandemic. Mitigating the risk of their acquiring the infection is crucial. TM also enables quarantined physicians to provide ECs, thus enabling other physicians to perform in-person care. The unique value of TM in this regard has also been recognised recently by the WHO.

TAKING A LEAF FROM THEIR BOOK

The concept of TM and ECs is not a new one. In the rural area of Gansu, China, TM was established in 2007. An interview-based study done in Gansu found only 10% individuals were unsatisfied with ECs.⁴ TM has previously been shown to be effective for illnesses like HIV, sexually transmitted infections, chronic illnesses and dermatological lesions. Globally, numerous centres and national health programmes have ramped up TM in their battle against COVID-19. Encouraged by these positive experiences, the Indian board of governors recently published guidelines on TM, even though the Telemedicine Society of India was founded 19 years ago.⁵

DENT IN ITS ARMOR

The linchpin of management of a pandemic is widespread testing, and conventional TM today may not offer that. However, TM services can find local testing facilities and also manage the flow of patients seeking a test fulfilling the basic goal. Further, patient satisfaction, payment and regulatory structures, medico-legal aspects, state licensing, fixing technical glitches and implementation are all hurdles for TM.

FLIP SIDE OF TM

In India, in the absence of availability of advanced technology, hardware, software and training on a national level, TM needs to be developed from a concept to reality. The costs for this programme implementation will initially be huge and will require all stakeholders including government, public sector enterprises, private agencies and public funds to invest. Even after establishment, the entire network system will need regular maintenance and upgradation, further adding to the costs. The training of patients and doctors needs to be carried out to avail the benefits of TM. An awareness of the need among the public needs to be brought out. This may even need a behavioural change in

view of underprivileged and uneducated rural population, social and religious hurdles and ignorance.

CONCLUSION

Times are truly changing, as pandemics pose unique challenges to healthcare systems, the trenches where the COVID-19 battle rages. In a world where the demand for easy-to-access and round-the-clock services has blossomed, it is only prudent that even medical science adopts the electronic way. The value of TM in terms of better-coordinated healthcare, of unnecessary hospital-contact, breaking the barrier of distance, and its striking harmony with the concept of physical distancing should not be ignored. TM provides a remarkably apt and practical answer to several threats that burden the healthcare system at exigent and strenuous times such as these. Even though there are initial road-blocks, costs and certain limitations, the eventual benefits easily outweigh. In this instance, TM should be the 'new normal' for the present and for all times to come.

Nipun Malhotra,¹ Pirabu Sakthivel², Nitesh Gupta,¹ Neeraj Nischal³, Pranav Ish¹

¹Department of Pulmonary, Critical Care and Sleep Medicine, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi, India

²Department of Head and Neck Surgery & Oncology, All India Institute of Medical Sciences, New Delhi, India

³Department of Medicine, All India Institute of Medical Sciences, New Delhi, India

Correspondence to Pranav Ish, Pulmonary, Critical Care, and Sleep Medicine, Safdarjung Hospital, New Delhi 110029, India; pranavish2512@gmail.com

Contributors All authors have made substantial contributions to the conception and designing of the work, and research into the topic, drafting and critically revising the work, and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. NM, PS, PI: design and drafting of manuscript, acquisition of information, critical revisions and final approval of the submitted version. NG, NN: design and drafting of the manuscript and final approval of the submitted version.

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ORCID iDs

Pirabu Sakthivel <http://orcid.org/0000-0002-6941-9892>
Neeraj Nischal <http://orcid.org/0000-0002-4751-2914>
Pranav Ish <http://orcid.org/0000-0003-1701-4970>

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