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Harnessing the Possibilities of Telemedicine for Consultations in COVID Crisis

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ABSTRACT

Telemedicine though practiced since several decades have been made official in India with the publication of Medical Council of India (MCI) guidelines to overcome the challenges associated with the COVID crisis. It is essential for healthcare professionals and the patients to reduce their chances of exposure to viruses and infections by adopting the possibilities of consultations with telemedicine. Though any mode of communication can be regarded as telemedicine, video consultations are the closest to in person consultation.

The author has 23 years of experience with telemedicine practice and associated original research. This is a review sharing the experiences and detailing the MCI telemedicine guidelines.

Keywords: DTMS[®], telemedicine, COVID.

INTRODUCTION

The practice of medicine has suddenly changed. Ever since the COVID-19 crisis, routine visits to the hospitals have become impossible. Many clinics have shut down. Major hospitals have only emergency departments functioning. There is even a rumor being spread that all diseases other than COVID-19 has drastically reduced all over the world. In reality, patients are delaying their consultations due to fear of visiting the hospitals. Hospital authorities and doctors are also abiding by the rules and restrictions to prevent community spread of COVID-19. At this juncture, telemedicine consultations have reemerged as the only solution to keep in touch with the regular patients/non-emergency patients.

Telemedicine is of course not new. Telemedicine is a very old concept. The first telemedicine consultation has been documented in *Lancet* on 29th November 1879 wherein which a doctor diagnosed a disease of a child at night over the telephone.¹ Though the concept of telemedicine is more than a century old, we have probably never harnessed the multitude of benefits offered by this technology. Personally the author has experienced the merits and demerits of telemedicine consultations in diabetes ever since Diabetes Tele Management System (DTMS[®]) was launched in 1997.²

DTMS[®] is now over 23 years old where merits, demerits and the cost effectiveness of this modality has been researched and published extensively.

The Diabetes Tele Management System (DTMS[®]) is a telemedicine-based follow-up program originally introduced at Jothydev's Diabetes Research Centre for the comprehensive management of diabetes. The program has five major components such as a customized software which includes Electronic Medical Records with different user interfaces, a decision support system provided by the multidisciplinary team, telecommunication with the help of telephones, e-mails, and internet using a secure website, telemedicine enabled customized empowerment, education, and troubleshooting and ensuring multidrug compliance in diabetes by linking DTMS[®] with diabetes pharmacy.² Since its inception, DTMS[®] with its team-based organizational technology which involves the active participation of doctors,

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nurses, dietitians, pharmacists and psychologists has been proven advantageous in many aspects of diabetes management such as frequently titrating the doses of medications, drastically reducing the number of hospital visits, and suggestions on lifestyle tuning measures such as diet, and physical activity and ultimately aid them to achieve their customized goals of therapy.

Telemedicine as per the original definition or the simplest definition is the use of telecommunication equipments for delivering medical care; the simplest being via the telephone and most complex being via the connected devices and sophisticated telemedicine equipments. Until very recently, consultations via social media platforms such as WhatsApp or via SMS were considered illegal in India. Coinciding with the national lockdown on 25th March 2020 subsequent to the COVID-19 breakout, the Medical Council of India (MCI) on the 25th of March published the telemedicine practice guidelines-amendment in the Indian Medical Council Regulations 2002. If the patient is initiating the call, it is considered as an implied consent in the absence of which the consent has to be obtained. Telemedicine consultation via social media apps such as WhatsApp, Google Hangout etc are now legal. The rules pertaining to telemedicine consultations in India are same as that of in-person consultations. The doctor is supposed to store all the data log of the consultation, the results, the images, Electrocardiogram, and whatever is transmitted back and forth. Since the telemedicine is legalized, the doctor can accept consultation fees online and have to provide the invoice/receipt to the patient.

Telemedicine Practice Guidelines include both the overarching principles and a practical framework for the practice of telemedicine in India. It has been included as an amendment to the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002, by adding Regulation 3.8 titled as "Consultation by Telemedicine" in the said Regulations.⁷ The guidelines furnish ample information on various aspects of telemedicine including information on technology platforms, tools available to medical practitioners and how to integrate these technologies to provide health care delivery. It also points how technology and transmission of voice, data, images, and information should be used in conjunction with other clinical standards, protocols, policies and procedures for the provision of patient care.

The Salient points from MCI guidelines are as follows:

A REGISTERED MEDICAL PRACTITIONER

A Registered Medical Practitioner (RMP) is entitled to provide telemedicine consultation to patients from any part of India. RMPs using telemedicine shall uphold the same professional and ethical norms and standards as applicable to traditional in-person care, within the intrinsic limitations of telemedicine.

TELEMEDICINE APPLICATIONS

The guidelines classifies telemedicine applications into four basic types : according to the mode of communication, timing of the information transmitted, the purpose of the consultation and the interaction between the individuals involved - be it RMP-to-patient/ caregiver, or RMP to RMP.

According to the Mode of Communication

According to the guidelines, multiple technologies can be applied for telemedicine consultations. It can be either through video using telemedicine facility apps, video on chat platforms, Skype/Face time etc or through audio using phone, VOIP, apps etc or text based using the telemedicine chat based applications such as specialized telemedicine smartphone apps, websites, other internet-based systems etc and general messaging/text/chat platforms such as WhatsApp, Google Hangouts, Facebook Messenger etc or asynchronous methods such as email/Fax etc. The guidelines also pinpoint the strengths and limitations of each of these three technologies.

According to Timing of Information Transmitted

For real time video/audio/text interactions, the RMPs can use either video/audio/text for the exchange of relevant information for diagnosis, medication and health education and counseling. For asynchronous exchange of relevant information such as the transmission of summary of patient complaints and supplementary data including images, lab reports and/or radiological investigations between stakeholders can be forwarded

to different parties at any point of time and thereafter accessed as per convenience or need.

According to the Purpose of the Consultation

The guidelines clearly differentiate the concepts First consult and Follow-up consult in this session. For a non-emergency consult, the first consult is the one that is initiated by the patient with any RMP for diagnosis/treatment/health education/counseling and the follow-up consult is the one which patients may use the service for follow-up consultation on his ongoing treatment with the same RMP who prescribed the treatment in an earlier in-person consult.

The most important factor to consider always is that telemedicine services should however be avoided for emergency care when alternative in-person care is available, and telemedicine consultation should be limited to first aid, life-saving measure, counseling and advice on referral. In all cases of emergency, the patient must be advised for an in-person interaction with an RMP at the earliest.

According to the Individuals Involved

According to the individuals involved the telemedicine services may be utilized to connect Patient to RMP, Caregiver to RMP, RMP to RMP and Health worker to RMP.

THE SEVEN ELEMENTS FOR INITIATING A TELEMEDICINE CONSULTATION

In addition to the aforementioned aspects, the guidelines spell out the seven elements which should be always taken into consideration before initiating a telemedicine consultation and are as follows:

The Context

Telemedicine should be appropriate and sufficient as per the context. The RMP should exercise their professional judgment in decision making as to whether a telemedicine consultation is appropriate in a given situation or an in-person consultation is needed in the interest of the patient and also should consider the modes available and their adequacy for a diagnosis before choosing to proceed with any health education or counseling or medication.

Identification of RMP and Patient

Telemedicine consultation should not be anonymous. Both the RMP and the patient should reveal their identities, and both should take the responsibility to verify the facts revealed from each other's side. Every RMP shall display the registration number on prescriptions, website etc.

Mode of Communication

Multiple technologies such as Video, Audio or Text can be used to deliver telemedicine consultations keeping in mind that all these technology systems have their respective strengths, weaknesses and contexts in which they may be appropriate or inadequate in order to deliver proper care.

Patient Consent

Patient consent is necessary for any telemedicine consultation which can be of implied if initiated by the patient or of explicit if initiated by a health worker, RMP or a caregiver.

Patient Evaluation

RMPs must make all efforts to gather sufficient medical information about the patient's condition including history/examination findings/investigation reports/past records etc. that are required to exercise proper clinical judgment. Also, RMPs shall maintain all the information and records of the patient as appropriate similar to in-patient consultation.

Type of Consultation

There are two types of patient consultations, namely, first consult and the follow-up consult.

If the patient is consulting with the RMP for the first time or the patient has consulted with the RMP earlier, but more than 6 months have lapsed since the previous consultation or the patient has consulted with the RMP earlier, but for a different health condition can be considered as a first consult and if the patient is consulting with the same RMP within 6 months of his/her previous in-person consultation and this is for continuation of care of the same health condition it can be considered as a follow-up consult.

However, situations such as new symptoms that are not in the spectrum of the same health condition; and/or RMP does not recollect the context of previous treatment and advice cannot be considered as a follow-up consult.

Patient Management

If the condition of a patient can be appropriately managed via telemedicine, based on the type of consultation, then the RMP may proceed with a professional judgement to provide health education as appropriate in the case and/or provide counseling related to specific clinical condition and/or prescribe medicines.

PRESCRIBING MEDICINES VIA TELEMEDICINE CONSULTATIONS

There are certain restrictions imposed by the guidelines on consult via telemedicine depending upon the type of consultation and mode of consultation for the prescription of medicines. The guidelines categorized the medicines into List O, List A and List B.

List O will comprise those medicines which are safe to be prescribed through any mode of tele-consultation such as medicines used for common conditions and are often available 'over the counter'. For instance, these medicines would include paracetamol, ORS solutions, cough lozenges etc.

List A medications are those which can be prescribed during the first consult which is a video consultation, re-fill, in case of follow-up.

List B medications are those which an RMP can prescribe for a patient who is undergoing follow-up consultation in addition to those which have been prescribed during in-person consult for the same medical condition. eg: Adding Metformin to already existing diabetes medication.

In addition there is a Prohibited list of medicines which cannot be prescribed by an RMP via telemedicine consultation and includes Schedule X of Drugs and Cosmetics Act and Rules or any Narcotic and Psychotropic substance listed in the Narcotic Drugs and Psychotropic Substances Act, 1985.

Issue and Transmit of Prescription

In the case of prescribing medicines via telemedicine consultation the RMP shall provide a photo, scan,

digital copy of a signed prescription or e-Prescription to the patient via email or any messaging platform. If in case the RMP is transmitting the prescription directly to a pharmacy, he/she must ensure explicit consent of the patient that entitles him/her to get the medicines dispensed from any pharmacy of his/her choice.

The components of an e-prescription include the name, qualification, register number, address, contact details including e-mail and phone number of the RMP, date of consultation, details of the patient, descriptions on chief complaints, medical history, examination and lab findings, suggested investigations, special instructions if any and the signature and stamp of the RMP.

Above all, the principles of medical ethics, including professional norms for protecting patient privacy and confidentiality as per IMC Act shall be binding and must be upheld and practiced by the RMP. Also, the RMPs cannot solicit advertisements for telemedicine consultation.

Also, the guidelines explicitly exclude specifications for hardware or software infrastructure building and maintenance, data management systems involved, standards and interoperability, use of digital technology to conduct surgical or invasive procedures remotely, other aspects of telehealth such as research and evaluation and continuing education of healthcare workers and provision for consultations outside the jurisdiction of India.

MERITS AND DEMERITS OF TELEMEDICINE

There are many advantages that both the doctors and the patients can harness through a telemedicine program. We have generated evidence on the multitude of benefits and the challenges successfully running a telemedicine program for more than two decades. A brief note is given below:

IMPACT ON GLYCEMIC CONTROL

Telemedicine ensures achievement of treatment targets of glycemia, in motivated patients adhering to the instructions of the telemedicine program. In our studies, we could observe that the telemedicine based program DTMS® could achieve glycemic controls at par with internationally recommended treatment

goals with minimal occurrence of hypoglycemia which could be due to multiple components of the system that is well designed to develop more awareness and knowledge among patients by interacting with diabetes educators, nurses, and dietitians. Frequent telemedicine follow-ups based on self-monitoring of blood glucose (SMBG) data enable slow and steady titration of drug doses, significantly reducing the instances of severe hypoglycemia and enhancing drug compliance.^{2,3}

IMPACT OF TELEMEDICINE ON REDUCTION IN MICROVASCULAR AND MACROVASCULAR COMPLICATIONS

Diabetes is associated with development of chronic vascular complications. The DTMS[®] based care in our center is proven to significantly reduce the occurrence of vascular complications in compliant patients.

COST-EFFECTIVENESS OF TELEMEDICINE

Even though there is a cost involved in teleconsultation, the money and time saved in physical visits to the clinic that would have been needed in a traditional healthcare delivery model alone make up for the extra costs. Moreover, it is proven that telemedicine is very cost-effective in the long run to delay or prevent the costly complications associated with a disease.⁴⁻⁶

ENSURING MULTIDRUG COMPLIANCE

Non-compliance to drugs is one of the major reasons for the failure in the treatment of diabetes. Frequent virtual communications through telemedicine ensure compliance to not only drugs for the treatment of glycemia but also for associated comorbidities.

CHALLENGES IN PRACTICING TELEMEDICINE

Even though telemedicine offers many advantages to both patients and the doctors, this is also of a major concern that telemedicine faces many challenges in its implementation and successful practice. Here follows a brief description on some of those challenges that need to be addressed while practicing telemedicine consultations.²

- Communication errors, inefficiency to respond to questions, unavailability of the physician to

attend the phone, etc., can be some of the factors that may provoke the patients. Therefore, rigorous and continuous training and supervision of the multidisciplinary team are required to ensure quality and expertise in answering the queries and interacting with the patient.

- Despite the multiple benefits, patients may not be willing to pay extra for the tele consultations. Many patients consider teleconsultation unofficial/casual. Since telemedicine is based on patient centered approach, in the absence of a definite payment model, alternate funding resources need to be explored.
- Even the slightest error in communication during a telemedicine consultation can result in serious consequences. Periodic training programs with specific focus to avoid the commonly committed errors should be of a routine practice.
- Patients in India are conventionally used to physical visits to the hospital and receiving treatment advice only from the physician. Therefore, it may take some time for the patients to get accustomed to teleconsultations. But the moment they realize that teleconsultations are equally beneficial or far more beneficial compared to in-patient visits, they will whole heartedly accept the modality.
- There is still the lack of a universally recommended telemedicine protocol and scientific organizations may consider formulating consensus guidelines to implement recommendations for telemedicine customized to geographical and clinic specific variables.

TELEMEDICINE: IS IT GOING TO BE THE FUTURE?

50-60% of the consultations in the doctor's office can be conducted via a telemedicine. But telemedicine may not be an appropriate modality for those consultations where physical examination is required, or an evaluation or investigation is mandate. The patients have to visit the doctor's office for their lifestyle diseases at least two or three times a year depending upon the stage and type of the disease. But the number of in-person consultations can be drastically reduced and replaced by virtual consultations. The virtual consultations have the added advantage for even the caretakers to join the patients who otherwise could not have had the opportunity to accompany the patient to the hospital due to other responsibilities

Telemedicine saves time and money for the patient as well as the family members. Irrespective of whether the patient is coming from a nearby location or a far away location, they will have the same benefits of better outcomes. Telemedicine consultations will continue to upscale in its number and be adopted by more and more institutions and practitioners. COVID crisis has opened an opportunity to reassess the possibilities of telemedicine and now it is there to stay forever.

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