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ROLE OF TELEMEDICINE DURING COVID-19 PANDEMIC

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ABSTRACT
At the end of 2019, patients with pneumonia of unknown etiology appeared in the city of Wuhan (China). After a short time, this infection affected not only the people of China but also the whole world. On March 11, 2020, the World Health Organization declared the disease a pandemic. A viral agent was identified - severe acute respiratory syndrome-related corona virus 2 (SARS-CoV-2), and the disease itself was named "2019 novel corona virus infection" (COVID-19). Telemedicine technologies are a form of medical care and training that can counteract the spread of a COVID-19 epidemic by eliminating direct contact of both medical workers with patients and medical workers and patients with each other. A narrative review was conducted to examine the current state of the utilization of telemedicine amid the current COVID-19 pandemic and to evaluate the benefits of continuing telemedicine usage in the future. A literature review was performed for articles related to telemedicine. Databases including Pub Med, Google Scholar, Cochrane Library and Ovid MEDLINE were searched. Three reviewers independently performed article selection based on relevance to our topic. We included all articles between 1990 and 2020 related to telemedicine using the following keywords: telemedicine, telehealth, policy, COVID-19, regulation, rural, physical examination. During the current pandemic, Centers for Medicare and Medicaid services have expanded access to telemedicine services. The advantages of telemedicine moving forward include its cost-effectiveness, ability to extend access to specialty services and its potential to help mitigate the looming physician shortage. Disadvantages include lack of available technological resources in certain parts of the country, issues with security of patient data, and challenges in performing the traditional patient examination. It is critically important that changes are made to fully immerse telemedicine services into the healthcare landscape in order to be prepared for future pandemics as well as to reap the benefits of this service in the future.

INTRODUCTION
Telemedicine is a service that is rapidly evolving to provide increased access to high-quality healthcare that is efficient and cost-effective, especially in the midst of the current COVID-19 pandemic. According to the Centres for Medicare and Medicaid Services (CMS), telemedicine is 'a service that seeks to improve a patient's health by permitting two-way, real-time interactive communication between the patient and the physician at a distant site'. Although similar, the terms 'telehealth' and 'telemedicine' should not be used interchangeably. Telehealth refers to 'the use of telecommunications and information technology (IT) to provide access to health assessment, diagnosis, intervention, consultation, supervision and information across distance.[1]

The World Health Organization (WHO) defines telemedicine as, the delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologiesfor the exchange of valid information for the diagnosis, treatment and preventionof disease and injuries, research and evaluation, and for the continuingeducation of healthcare providers, all in the interests of advancing the health ofindividuals and their communities.[2]

In the face of the current pandemic, providers have been forced to increase their utilisation of telehealth services at the expense of traditional face-to-face patient encounters. During the current pandemic, telemedicine has the potential to greatly improve access to quality, affordablecare for patients while maintaining physical distancing for the safety of both patients and providers. In addition to virtual visits, text, email and mobile phone applications as well as data from wearable devices can be usedto share information between patients and clinicians.[3]

The utilisation of telemedicine has been rapidly increasing in the USA. From 2010 to 2017, the percentageof US hospitals that connect with patients through theuse of video and other technology has

increased from 35% to 76%. The American Medical Association further reported that telemedicine insurance claims increased by 53% from 2016 to 2017. This is likely due to the increasing efficacy of telemedicine, as today physicians are able to deliver more and more of their services virtually.[4]

The Indian Space Research Organization (ISRO) initiated telemedicine in India inn2001, starting with the Telemedicine Pilot Project. The Health Ministryestablisheda National Telemedicine Taskforce in 2005, sharing jurisdiction with the Ministry of Health and Family Welfare. Additional national programs in Indiainclude the Integrated Disease Surveillance Project (IDSP), the National Cancer Network (ONCONET), the National Rural Telemedicine Network, the Digital Medical Library Network, and the National Medical College Network that links medicalcolleges with the primary purpose of e-learning.[5]

In this article, we aim to discussthe evolution of the telemedicine, utilisation during the current pandemic and benefits and limitations of telemedicine.

METHODS

A literature review was performed for articles related to telemedicine. We used Pub Med, Google Scholar, Cochrane Library and Ovid MEDLINE to searchpublished articles between the years 1990 and 2020. Searches through the references of retrieved articles were also performed. In addition, we reviewed the web pages of various professional organisations including the American Telemedicine Association and the CMS for information and data relative to the topic of interest. Inclusion criteria consisted of articles written between 1990 and 2020, published works that were available in English and articles related to telemedicine in all settings. We excluded duplicates, abstracts, non-English articles, as well as those that were unpublished works or those not related to telemedicine.

Telemedicine in clinical medicine Benefits	**Telemedicine in clinical medicine Limitations**
1) Avoids potential exposure to COVID-19.	**1)** Unable to perform a physical examination.
2) Nurses check-in is not necessary.	2. Laboratory testing is not possible
3) Can easily involve other family members in discussions on the patients' request.	3) Billing for medical services may vary.
4) Savings on travel to hospitals	4) Technical problems related to users, devices, or servers.
	5) Requires internet and/or phone Connectivity.

DISCUSSION

Increased utilisation and need of the hour

Telemedicine has become a means of 'forward triage which is when patients are triaged before they ever visit anemergency department, amid the COVID-19 pandemic. Particularly, direct-to-consumer, which is also referred to as on-demand telemedicine has become a means by which patients can be screened despite being self-quarantined. This means of triage maintains patient-oriented care while protecting patients and healthcare providers. For patients who may have COVID-19, telemedicine has been used to assess respiratory symptoms, which may be part ofthe early presentation of COVID-19 infection.[6]

Importance of infrastructure

The success of telemedicine rests largely on infrastructure. While India has made great progress in the field of telecommunication in the last two decades, a large proportion of rural areas have yet to receive benefits of the digital revolution. Upgrading infrastructure will be essential for telemedicine to succeed, especially in rural areas of the country. A massive scale up of capacity and improving infrastructure, preferably by the government, can enable an attractive market for private telecom operators, who will, inturn, facilitate greater and higher quality access to telemedicine services.[7]

IT sector integration in healthcare

Healthcare providers have been able to communicatewith patients 24/7 via webcam-enabled computers and smart phones. Telemedicine visits may include video communication but may also include text, email and mobile-phone applications as well as wearable devices and chat bots. Technical fees have been incorporatedin Medicare and Medicaid coverage as a result of theIT sector integration into healthcare.[8]

The Indian telemedicine experience during COVID-19: public and private

On 9 August, 2020 the government of India introduced its telemedicine service, eSanjeevani, as part of its 'Digital India' initiative. During the COVID-19 pandemic, practitioners have used video conferencing to diagnose and treat patients in geographically diverse locations.[9] The platform currently permits two types of telemedicine services: Doctor to Doctor (eSanjeevani) and Patient-to-Doctor(eSanjeevani OPD).[10] These services are part of the larger government scheme to connect larger hospitals to smaller health centres in remote areas. As it expands, medical college hospitals

and large government hospitals in the States would actas 'hubs' to provide tele-consultation services to 'spokes', or primary health carecentres (a "hub and spoke" model).[9] India has relied on this model for providing non-COVID essential healthcare, with approximately 3 million consultations on the eSanjeevani platform as on 17 March 2021. In this era, it should be possible to integrate telemedicine with Artificial Intelligence technology, to enhance the quality of healthcare and create new models of care. India is already experimenting with these elements in many initiatives. In Madhya Pradesh, a large state in India, the state government has linked its eSanjeevani telemedicine platform to about fifty Primary Health Centres (PHCs) for patient follow-up and care; these centres depend on tertiary care hospitals several hundred.[11]

CONCLUSION

Over the past several decades, we have been hit with numerous pandemics, including H1N1, Ebola, SARS-CoV, MERS-CoV, and currently, COVID-19. In the future, it is probable that more novel pandemics will arise. The development and utilisation of telemedicine services is important, as these services allow us to continue to provide high-quality healthcare while maintaining the practice of physical distancing to preventthe spread of these viruses. The benefits of telemedicineinclude convenience, increased access to care from a distance, especially for patients living in rural areas, and decreased healthcare costs. Studies have shown that telemedicine appointments can be equal to in-patient visits in a variety of specialties. Continued research should be done to improve aspects of the physical examination for telemedicine visits, especially for specialties in which intimate patient contact is an important aspect of the physical exam.

REFERENCES

1. Telemedicine: centers for Medicare and Medicaid services; Available https://www. medicaid. gov/ medicaid/ benefits/ telemedicine/ index.
2. WHO Global Observatory for eHealth. Telemedicine: opportunities and developments in Member States: report on the second global survey on eHealth. World Health Organization. 2010. https://apps. who. int/ iris/ handle/ 10665/ 44497. Accessed 20 April 2020.
3. Keesara S, Jonas A, Schulman K. Covid-19 and health care's digital revolution. N Engl J Med., 2020; 382: e82.
4. Telehealth satisfaction study: J.D. power, 2019. Available: https:// www. americantelemed. org/ resources/ telehealth- adoption- andusage/.
5. Chellaiyan V, Nirupama A, Taneja N. Telemedicine in India: where do we stand? J Fam Med Primary Care., 2019; 8(6): 1872–6. https:// doi. org/ 10. 4103/ jfmpc. Jfmpc 264_ 19.
6. Hollander JE, Carr BG. Virtually perfect? telemedicine for Covid-19. N Engl J. Med., 2020; 382: 1679–81.
7. Parbat K. Brace yourself for slower data speeds. The Economic Times. 2020. https:// econo micti mes. india times. com/ tech/ internet/ brace- yours elf- for slower- data- speeds/ artic leshow/ 74702 264. cms. Accessed 24 April 2020.
8. Services Cf MaM. State Medicaid and CHIP Telehealth Toolkit –Policy. Considerations for States Expanding Use of Telehealth COVID Version, 2019 Available: https://www. medicaid. gov/ medicaid/ benefits /downloads / medicaid - chip- telehealth- toolkit. Pdf.
9. Press Information Bureau, New Delhi. A big win for Digital India: Health Ministry's 'eSanjeevani' telemedicine service records 2 lakh tele-consultations, 2020. https:// pib. gov. in/ Press Relea sePage. aspx? PRID= 16469 13. Accessed 06 December 2020.
10. Porecha M, Singh PV. eSanjeevani The government-owned dark horse in India's telemedicine race. The Ken 2021. https:// the- ken. com/ story/ esanj eevani-the- government- owned- dark- horse- in indias-telemedicine- race/? utm_ source= daily_ story & utm_ medium= email & utm_ campa ign daily_ news letter. Accessed 18 March 2021.
11. Kuziemsky C, Maeder AJ, John O, Gogia SB, Basu A, Meher S. Role of artificial intelligence within the telehealth domain. Year b Med Inform, 2019; 28(1): 35–40. https:// doi. org/ 10. 1055/s- 0039- 16778 97.