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THE IMPACT OF COVID-19 PANDEMIC ON TELEMEDICINE

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Keywords: telemedicine, COVID-19 pandemic, financial implications Abstract: The COVID-19 pandemic is a public health emergency of international concern. Due to mandatory social distancing and the lack of effective treatments, telemedicine has become the safest interactive system between patients, both infected and uninfected, and clinicians. During this period, all patients, with acute or chronic conditions, need ways to obtain medical attention other than going to Emergency Room (E.R.) or to the clinic. Telemedicine has been an effective approach for COVID-19 management as it allows to reduce the risk of cross-contamination and provides support to remote rural location. The most optimistic forecasts could not anticipate the impact that a pandemic will have on this medical field, whose financial implications exceeded all expectation.

INTRODUCTION

No other disease has had so major impact throughout the world as COVID-19 pandemic has, forcing almost all countries to take exceptional measures to fight successfully against it.

Coronaviruses are a genus of the coronaviridae family and may cause illness in animals as well as in humans, especially respiratory infections. SARS-COV-2 is a recently discovered member of this family and the cause of disease-19 (COVID-19). Four months after the virus was identified in Wuhan, China, due to its fast spreading, World Health Organization announced it as pandemic event.(1)

To reduce virus transmission, all kind of measures has been applied by the governments, ranging from local mobility restrictions to national and international travel restrictions, even to a complete lockdown. As a result, it has been necessary to implement new solutions to address both the patients with COVID-19 and other patients searching for the best medical treatment for their diseases.(2) Great technological advances provide new innovative options as using in the field of telemedicine since it has the potential to minimize the exposure to virus, to help researchers in their epidemiological studies, to treat this disease suitable and to provide adequate management of clinical cases.(3,4,5)

Telemedicine is defined as the field of medicine using remote medical data transferred via electronic communication by technological devices to help caregivers improving their goals addressed to patients from distance. There are a large variety of telecommunication technologies providing applications and services such as e-mail, smartphone or two-way video.(6) These modern achievements enable medical providers to offer consultations, monitoring, guidance and health advices to the geographically remote patients.(7)

From an anecdotic point of view, the origins of telemedicine could be assumed as far back as the use of ancient scrolls containing information about diseases, outbreaks or epidemics. Furthermore, some societies used smoke signals to warn their neighbours of different kind of sickness, like plague.(8) By the end of 19th century, great inventions such as the telephone and the typewriter deeply changed the interaction between patients and physicians. So, long before COVID-19 pandemic, telemedicine has initially tried to provide healthcare assistance to patients in areas where access to medical services was difficult and to the patients with bed immobilization, mainly aimed to improve chronic disease management.(9)

Telemedicine has had a tremendous development over the past several decades, but different issues, such as legal regulation, fear of medical data being exposed or reimbursement, have prevented its complete assimilation into the healthcare system.(10) Recently, the role of telemedicine has become remarkably important, due to sustained development and deployment of smart technologies. Today, with the advancement of digital technologies, we can use telemedicine all over the world. According to a recent report by the Pew Research Center (11), 90% of Americans use currently the internet and 81% of them own a smartphone. But digital technologies are increasingly used worldwide, so this reality has become the critical factor for the sustained advancement of telemedicine. Obviously, the internet is a sine qua non condition for telehealth services. The accessibility of electronic medical data for both patients and physicians is so easy to afford nowadays. Through these services, patients can view results of their medical tests and send messages to their physician. Also, the medical providers are able to facilitate face to face interaction via live video, so-called synchronous telemedicine.

Telemedicine, however, means more than implementing a video conferencing system. We are talking about a whole suite of medical equipment, integrated with a special software, which allows the transmission of the results of investigations and tests performed at the patient's location to a remote medical team, which can analyse later the patient's file and establish a diagnosis and appropriate treatment, so-called

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asynchronous telemedicine.(10)

Such a telemedicine system responds to patients' need for specialized medical services provided at home and brings a number of important benefits to both patients (reducing the time required to establish the diagnosis and the associated costs, followed by an early initiation of therapeutic protocols and reducing or even elimination of medical errors), as well as for medical service providers (increasing the coverage of traditional medical operators, optimizing the time needed to resolve cases, decongesting outpatient clinics, traceability of patients' medical history, covering certain specializations where need it).

Worldwide, national and international guidelines have strongly recommended telemedicine inclusion in their updates. Many countries have begun to use telemedicine more and more into their health care services and COVID-19 pandemic has strongly accelerated this trend. All this period of time, due to mandatory social distancing and to the goal of minimize the risk of infection, telemedicine has become the safest interactive system between clinicians and patients, regardless they were infected or not.(12) So, it is not a surprize that WHO named digital technology as one of the essential policy services in medical battle to respond to the COVID-19 emergency. Teleconsultations are a safe and effective way to assess suspected COVID-19 cases and to guide the patient's diagnosis and treatment, minimizing the risk of disease transmission. Such services can help caregivers to have an efficient communication with their health users during the pandemic and provide appropriate answers to their health concerns. Due to strongly recommended social distancing, telemedicine proves to be an excellent tool care delivery in a safe manner for communication between physicians and patients.(13)

The COVID-19 crisis highlighted the need for an easily deployable, mobility-reducing, and low-cost alternative to deliver health care to the remote patients, immobilized in their houses by regulations. The pandemic rapidly increased the perceived benefits of telemedicine and lowered its costs. Moreover, high mobility restrictions imposed by governments pushed individuals to experience telemedicine first-hand, so that more patients find telemedicine even a better substitute for inperson care. Fifteen years ago, data suggested that we should assist to an increase of financial telemedicine's market from 9,8 billion in 2010 to 33 billion in 2025. Yet, according to Global Market Insights Inc., telemedicine's market size is expected to exceed \$175 billion by 2026. Covid-19 pandemic plays a major role in this hardly believe growth of this specific healthcare field. Data from the US Department of Health show some unbelievable data: the number of patients with government health insurance who used digital devices to interact with their health care providers rose from 11,000 users on March 7, 2020, to 1.3 million as of April 18, 2020.(13) New analysis indicates telehealth use has increased 38X from the pre-COVID-19 baseline.(14)

The general legal frame of Telemedicine was finally adopted in Romania by the end of November 2020 by the Emergency Ordinance (EO) no. 196 for amending and supplementing the Law no.95/2006 on health reform.(15) The adopted norm outlines the possibility of providing medical assistance through Telemedicine by public and private health care units, regardless of whether or not they are in a contractual relationship with a health insurance company. Teleconsultation and Teleradiology services can help shorten waiting lists, optimize the use of resources and help increase productivity, which ultimately leads to both improved care and a better efficiency of health system in Romania. This should have even more important and necessary benefits in the current context caused by COVID-19 pandemic. Also, Telemedicine can prevent the spread of SARS-CoV-2 coronavirus due to less interpersonal direct interactions, without reducing patients' access to health care services.

There are some challenges for the development of this medical field in Romania, due to factors that limit the accessibility to the population: deficient legal framework, lack of settlement of medical services provided through telemedicine systems, insufficient funding. We have to recover from other developed countries, but there are some positive signs in the current pandemic context by adopted measures to provide remote medical services for many patients nationwide.

As in other areas where, once adopted a different consumer behaviour in response to the needs of a crisis, some changes have been noticed, we anticipate that the use of telemedicine systems will be possible in the near future because it brings many benefits, such as time and cost savings and it resolves shortcomings that have appeared in these delicate times of social distancing and resource optimization.

We believe that a system implemented at a national level is imperatively necessary to facilitate access to medical services, especially for people in areas where there is no developed medical infrastructure. Moreover, it will solve, in a very simple way, different problems we are currently facing, such as long waiting times in family doctors' offices, traceability of patients' medical history in a digital form, the electronic prescriptions. Obviously, the costs of implementing such a system could amount hundreds of millions of euros.

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