

# Ethics in Telemedicine and Telehealth: A Literature Review

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**Abstract**— *Telemedicine is a new way of providing the same services that medicine already has been using without adding new diagnostic or therapeutic capabilities; its advantage comes essentially from the ability for a patient to be effectively managed by a practitioner without the need for a physical presence. Overall, telemedicine maximizes benefits for patients by improving access, quantity, quality and continuity of care to patients. This article provides an overview of ethical issues of telemedicine. With this technologies, the physicians' fundamental ethical responsibilities remain the same. Although technology pushes the boundaries of informed consent, justice, and provider competencies, as well as a number of professional regulatory domains; to use it to its fullest, specific training in the practice of telemedicine and its ethical aspects must be considered.*

**Keywords**— *Ethics; Telehealth; Telemedicine; physicians; patients.*

## I. INTRODUCTION

According to the World Medical Association, telemedicine is the practice of medicine over a distance, in which interventions, diagnoses, therapeutic decisions, and subsequent treatment recommendations are based on patient data, documents and other information transmitted through telecommunication systems [1]. Telehealth on the other hand is any platform offering health information and support that does not necessarily involve a clinician (e.g. websites about healthcare treatments) [2]. The development and implementation of information and communication technology are creating new and different ways of practicing medicine. It has potential to improve health care. A seven years study of telemedicine in Médecins Sans Frontières demonstrate that in low-resource settings it improve the management of patients [3].

Ethics invests all areas of social life and yet its definition remains difficult. It is a reflection on human values. This reflection is more important for the physician who works on humans. However, medical practice is governed by medical ethics which protect patient and their lives.

With the increasing use of novel technologies and smartphones in all aspects of daily life, a growing number of individuals are seeking answers online and can obtain them virtually any time, anywhere [4]. These technologies offer opportunities for patients to receive care remotely through telemedicine applications. They also facilitate the contact with distant specialists for rare disease [5,6]. Nevertheless, these

technologies raise ethical challenges. Exchanging health information through technologies create risks to safety, and providing care electronically create risks to quality and continuity of care, all of which could weaken patient-physician relationships [5,7].

The ethical issues that pose telemedicine and telehealth are described in the literature from several angles.

## II. LITERATURE

We searched PubMed, Embase and Google Scholar for the following terms and synonyms in English: “telemedecine”, “telehealth”, “ethic”, and “teleconsultation”. Inclusion criteria were that the paper was in English and described ethic issues in telemedecine or telehealth.

### *1-General Aspects*

Telehealth and telemedicine technologies allow physicians and other providers to consult and assist with data interpretation and patient care regardless of geographic separation. For example, a radiologist may read advanced imaging for a primary care physician in a remote area [8].

In general, people are rarely neutral about telemedicine. The proponents believe that telemedicine represents the future. It will lead to higher standards of medical care as well as reduced costs. The opponents believe that it represents a threat to the traditional doctor-patient relationship and is an intrinsically unsafe way to practise medicine. The potential legal and ethical problems associated with telemedicine encourage the view that the possible complications of telemedicine mean that it could not be used to form the basis of a clinical service [9,10]. Though it is described as having ethical issues, telemedecine has been used for clinical ethic expertise. By the way, in their review in 2015 on Telemedicine as a Tool to Bring Clinical Ethics Expertise to Remote Locations, Alexander A. et al. recommend telemedicine as the optimal model providing expert support to local ethics committee members tasked with providing clinical ethics consultation services [11].

Also, Telehealth has gained significant traction in a number of health care service lines including neurology, behavioral health, and case management. For example Poststroke telehealth has been a useful supplement to patient's rehabilitation and recovery, particularly when combined with the communication of a health care professional [8,12].

Although these technologies have seen significant growth and may offer many potential benefits, there are a number of ethical, legal, and regulatory issues that surround these developing technologies. The most used approach to clinical ethical analysis was popularized by Beauchamp and Childress in their book, *Principles of Biomedical Ethics*. They establish four principles, which are: respect for patient autonomy; beneficence; non-maleficence; and justice [13]. Irrespective of the emergence of new technologies and models of care, the physicians' fundamental ethical responsibilities remain the same [14]. But, technologies push the boundaries of informed consent, justice, and provider competencies, as well as a number of professional regulatory domains [8].

To amplify our point throughout the review we will use the term telemedicine to refer to both telemedicine and telehealth and we will make the specificity of each when necessary.

## 2- Autonomy and Consent

The principle of respect for patient autonomy means that each individual patient has the right to choose which medical interventions he or she will accept or refuse.

Respecting the autonomy of others implies providing all information necessary for informed decision-making; that this information has been verified to be understood; ensure the ability of the sick person to decide and that the decision is consistent with these three prerequisites [15].

If both telemedicine and in-person care options exist, and the condition is likely equally well managed through both modalities, then the patient should be made aware of both options. It should not be assumed that a patient would prefer a telemedicine encounter to an in-person evaluation, even if the individual lives far from a sleep center or experiences disability [15].

The Federation of State Medical Boards (FSMB) suggests the following elements should be included in informed consent: documentation of the patient, provider, and credentials type of telemedicine being used (face to face, online prescribing, and so forth) recognition that the practitioner may decide whether managing a particular condition is appropriate via telemedicine, security measures taken for Protected Health Information (PHI), and potential privacy risks, clause holding providers harmless for information loss caused by technical failure and requirement for patient consent to forward PHI to a third party [16]. More recent studies have demonstrated that patients see the distancing effect of telemedicine as a benefit, feeling more comfortable, less intimidated and are way more able to take a rational decision, discussing sensitive issues through a screen than in person with the doctor [17].

Furthermore, the use of apps in non-clinical contexts and frequently in a direct-to-consumer-mode yields a shift towards ethically relevant interests and rights of the user in contrast to the interests and rights of the patient [18].

Thus, the strategically acting user or patient-as-consumer is not merely 'perfectly autonomous' [19].

Also, the reasonable use of digital health technologies such as self-tracking and self-management hence requires autonomy both in the sense of digital and health literacy. The

user is not acting autonomously merely in the original sense of medical ethics as being able to consent to a specific treatment but on the basis of her self-learned competencies and with the support of customized, ubiquitous technology proactively takes charge of her (self-) care and prevention [18].

## 3- Beneficence and Patient-Doctor Relationship

For many, this is the governing principle of medicine. In making diagnosis, deciding on one treatment instead of another, the physician is guided by what he or she believes is best for the patient. It contains two principles which the first is that the action taken must be beneficial and the second it must be useful; have a positive cost-benefit ratio.

About telemedicine, one of the complaints is the insensitivity associated with healthcare providers utilizing telemedicine for communicating end-of-life treatment to their patients. A patient who is told of an incurable diagnosis by a stranger on a computer screen, will not have the same perception like in face-to-face consultation [20].

The former president of the American Medical Association (AMA), abounded in the same way, saying that delivery of bad news electronically should be a doctor's "last choice", that choosing efficiency over compassion was effectively a loss of our humanity [21].

Therefore, the AMA recommends the use of telemedicine as a supplement to, rather than a substitute for, in-person medicine [21]. They are joined by French authors for whom the risk of dehumanization of the medical act is major. Even if the final aim is to cure, the most important is the notion of the relationship between the patient and care provider. Moreover, when no therapeutic solution is possible, the presence of the doctor remains important, as the aphorism reminds us: "Healing sometimes, heal often, always console" [22].

## 4- Privacy, Confidentiality and Security

The risks to patient privacy and confidentiality arising from the use of telemedicine systems are easy enough to identify and the emphasis in most disseminated research on the legal and ethical aspects of telemedicine has largely been upon these issues. The General Medical Council (GMC) in England has stated that when clinicians are responsible for confidential electronic information they must make sure that it is effectively protected against improper disclosure when it is disposed of, stored, transmitted or received [10,23].

In their study on telemedicine and ethical dilemmas, in order to see how telemedicine was perceived by medical students in Romania, Rogozea et al. made a survey based on a questionnaire. It appears that, 60% of the students think that the greatest problem in respect to confidentiality is to ensure that confidentiality rules are respected not only by the medical professional group but also by the other specialists in telemedicine which could be involved in this process [24].

The concern over privacy is legitimate. Patients may not know exactly who will be responding to and sharing their personal medical information. That information is available on different devices and computers, increasing the potential for security breaches, which may undermine patients' acceptance of telemedicine. With asynchronous communication, a lack of

clarity about who exactly will respond may raise further privacy concerns [25].

Data security has also been a challenge, with cyber attacks, hacking of databases and data kidnapping being reported frequently [26]. Incidents of data breaches and “kidnapping” (data held by hackers for ransom) are on the rise. In Switzerland, according to the Breach Portal of the Health and Human Services (HHS) Office of Civil Rights, millions of healthcare records have been affected to date [26]. In May 2017, healthcare databases in one hundred countries faced a ransomware attack claiming a ransom of \$300 in bitcoin to unlock affected machines[26,27].

But security issues are more operational than ethical, inasmuch as new encryption and security tools to protect information continue to proliferate. To gain patient confidence, it is essential that a robust privacy and security plan accompany any new telemedicine program and be communicated to patients [25].

#### 5- Non Maleficence, Justice and Equity

For physicians who provide clinical services, fulfilling the obligation to provide competent care further entails being proficient in the use of the relevant technologies and being comfortable using technology to interact with patients. They must assume that not hurting the patient in those cases simply means less benefits for them [21].

There are certain circumstances whereby upholding, non-maleficence, might require avoiding telemedicine. For example, telemedicine should be avoided in young children, particularly non-ambulatory children, where there is an increased need to screen for child abuse. Concerns about the potential great harm should outweigh any potential benefit in this scenario [21].

Telemedicine platforms have the potential to alleviate or worsen existing inequalities; they can if their popularization is guided by the pursuit of gain, rather than by the search for health care accessible to all. Studies also show that telemedicine does not eliminate discriminatory and therefore unethical behaviour. For example, a field experiment of an online mental health care market found that counselors were less likely to respond to a direct message from a prospective patient if the individual appeared to be black (based on the person’s name) and less educated (exhibiting “poor writing mechanics”)[28].

However, they can also facilitate access to care for individuals who do not have easy access to care. Telemedicine would allow the inhabitants of the enclave regions an access in the same way as city dwellers to specialized consultations at the one condition that they are financially accessible to all. For this reason, many have argued that telemedicine offers large benefits with regards to issues of social justice and equitable access to care [17].

In principle, ethical issues will exist whether care delivery is via telehealth or traditional face-to-face care. These include maintaining a strong patient-physician relationship, protecting patient privacy, promoting equity in access and treatment, and seeking the best possible outcomes.

### III. CONCLUSION AND RECOMMANDATIONS

The increasing access of internet and the easier use of digital technology makes the practice of telemedicine and the use of telehealth unavoidable.

The COVID-19 pandemic in a record time has also propelled the use and practice of telemedicine. Medicine, which in the past was based mainly on a physical relationship of trust between the doctor and the patient, is now increasingly being held by technology which influences more than ever the quality of care and the human values that frame a medical consultation. However, although it gives added value in terms of patient accessibility to doctors and specialists and in improving the follow-up of chronic pathologies, it reveals several ethical shortcomings. The need for telemedicine and the highlighting of ethical problems linked to this technology have prompted several countries and societies to take measures aimed at regulating this practice. If proper guidelines and safeguards are established internationally and nationally for telemedicine it can be medically, legally and ethically justified. The setting up in countries of a clear legislation which regulates this technologies and the popularization of existing recommendations will surely ensure the confidentiality and security of digital patient data and strengthen the trust relationship between the physician and the patient. However, set up teaching and training in the practice of telemedicine will make possible to have qualified personnel who will be able to manage the medical consultation in all its ethics through technology.

#### Competing interests

The authors declare no competing interests.

#### Author’s contributions

Study conception: EGA; manuscript writing: EGA, AAE; critical revision: NVN, ARN, SPM, GN; supervision: EGA. All the authors have read and agreed to the final manuscript.

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