

# Legal and Ethical Perspectives of Teledentistry-Based Dental Practice in Indonesia

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**Abstract.** Telemedicine has become an increasingly popular method for providing remote healthcare services, including in dental practice. However, the implementation of telemedicine in dental practice raises various questions regarding legal and ethical aspects. This research employs a normative juridical research method by approaching legislative regulations and conducting a review of relevant legal and ethical literature. The results of this study will offer a thorough insight into the legal and ethical challenges encountered by dental practitioners using telemedicine in Indonesia. Additionally, it will propose recommendations for policy development to improve adherence to legal and ethical standards in teledentistry-based dental practice. This study aims to significantly enhance the understanding and advancement of sustainable dental practices in the telemedicine era.

**Keywords:** Dentistry, Telemedicine, Ethics

## 1 Introduction

Health is a form of human rights protected by Indonesian laws and regulations, encompassing physical, spiritual, mental, and social well-being, as outlined in Article 28H, paragraph (1) of the 1945 Constitution of the Republic of Indonesia. Health becomes a measure of societal well-being, which is the national goal of the Indonesian nation.[1] This requires the government to provide adequate, affordable, and quality healthcare facilities for all the people of Indonesia.

The development of technology has been a catalyst for the advancement of healthcare services globally and specifically in Indonesia. This technological advancement is due to the Fourth Industrial Revolution, where everything is internet-based.[2] The era of the Fourth Industrial Revolution has made technology and communication support all available information.[3] The presence of technology enables individuals from various parts of the world to easily establish relationships without being limited by distance or time.[4] This advancement in the era of globalization is essential for all of humanity. Human interactions have also changed. In the past, many human activities had to be done face-to-face. Then, with the advancement of technology, these activities can be carried out without regard to distance and can be completed with just a touch. The healthcare sector has also entered the Fourth Industrial Revolution. Indonesia is making great efforts to keep up with the advancements in information technology and science in the current era, including through telemedicine, which represents technological advancements in the healthcare sector.[5]

Telemedicine, derived from Greek, means 'distance' (tele) and 'medicus', which refers to healthcare services provided by healthcare professionals.[6] Telemedicine, known in Indonesian as telemedisin, is defined in Law Number 17 of 2023 concerning Health as the delivery and facilitation of clinical services using telecommunications and digital communication technology.

Telemedicine services provide opportunities for medical practices that are no longer constrained by distance, especially healthcare services in remote areas.[7] In conventional medical practice, consulting with a doctor typically involves face-to-face interaction between the patient and the doctor. However, now this process can be done online with the assistance of a computer or laptop, and it can also be done through smartphones. This is a benefit of implementing telemedicine in Indonesia, given the country's archipelagic nature with its 16,766 islands.[8]

The convenience of providing healthcare consultations through telemedicine also encounters challenges or obstacles. Health equality in Indonesia using telemedicine faces constraints and challenges including: uneven internet distribution, especially in remote areas, disparities in technology between rural and urban areas, human resource issues, concerns about the accuracy of diagnosis and therapy enforcement in telemedicine due to potentially inaccurate data quality, and unclear financing systems for telemedicine service providers.[9] Additionally, the regulations that allow for the implementation of telemedicine in Indonesia, specifically Minister of Health Regulation Number 20 of 2019 on Telemedicine Services between Healthcare Facilities, only cover telemedicine practices conducted within healthcare facilities. They do not address the rules for doctor-patient telemedicine practices in the private sector through healthcare applications, which are now widely used by the public. The implementation of medical practice through telemedicine is a special case, cannot be equated with conventional medical practice where doctors and patients can meet in person. There are limitations for doctors when examining patients through telemedicine.

Technology is akin to a double-edged sword. While it offers numerous benefits and conveniences, it can also lead to disadvantages for its users if not used wisely.[10] The presence of telemedicine does not ensure a seamless process. If the technology is available but human resources are unprepared, telemedicine becomes ineffective. Likewise, even when technology and human resources are ready, the lack of preparedness in institutions or organizations can impede the progress of telemedicine. [11]

From the preceding introduction, it's apparent that while offering myriad advantages, the swift evolution of telemedicine also gives rise to a range of issues, especially concerning ethical and legal matters. Therefore, the researcher intends to comprehensively examine and analyze:[12]

- a. What Are the Forms of Innovation in Teledentistry Dental Services in Indonesia?
- b. How is Teledentistry-Based Dental Practice Reviewed in Terms of Ethical and Legal Aspects?

## **2 Discussion**

### **2.1 Innovation in Teledentistry Dental Services**

Teledentistry involves the application of telehealth systems and techniques within the field of dentistry. Initially, as a branch of telemedicine, teledentistry is linked with improving

patient care, dental education, and the communication efficiency among dentists.[13] Communication in teledentistry utilizes messaging platforms such as WhatsApp, Telegram, SMS, or Messenger, as well as video applications like Google Meet, Skype, and Facetime. However, recent advancements have introduced specialized applications tailored for teledentistry and telemedicine services. Teledentistry is defined as the remote provision of dental care through various mediums including video, audio, or multimedia.[13] Teledentistry, a component of telemedicine, offers convenience in dental healthcare services by facilitating tasks such as diagnosis, treatment planning, consultation, and follow-up.[14]

Teledentistry can serve as a screening tool in characterizing dental patient cases. Dentists can characterize whether a patient's dental case is elective or emergent. Elective cases are recommended to be postponed to prevent unnecessary movement within the community. Emergent cases are highly prioritized during a pandemic outbreak. These cases are recommended to be designated at dental clinics or hospitals. Screening enables dentists to establish safety measures that will reduce unnecessary movement. The nature of teledentistry reduces movement throughout the community, for example, by preventing the transmission of SARS-CoV-2.[15]

The application of teledentistry in dental healthcare services can be used for telediagnosis or teleconsultation. Thus, doctors or healthcare providers can create action plans or follow-ups from remote locations. Consequently, remote areas or communities with limited access to dental healthcare facilities can also receive better dental healthcare service.

In dental medicine, teledentistry services encompass the integration of telecommunications and dental procedures, allowing for the remote exchange of clinical information in the form of electronic medical records and digital images. This facilitates oral consultations and treatment planning from a distance.. Teledentistry can be conducted by all dentists who have telecommunication facilities and patients from all corners of Indonesia. Teledentistry services are best used for early detection of diseases, providing preliminary systemic treatment (per oral) to address emergency conditions, and can serve as a means to monitor a disease condition. The field of oral diseases is closely related to the competencies mentioned above.[16]

Several studies have showcased the significance of teledentistry in diagnosing and treating oral diseases. For instance, dental care centers in Belfast, Northern Ireland, utilized a prototype teledentistry system to demonstrate its efficacy. Torres-Pereira et al. highlighted the effectiveness of remote diagnosis in identifying oral lesions by transmitting digital images via email. Similarly, Summerfel discussed the implementation of teledentistry by the Northern Arizona University Dental Hygiene Department, which enables healthcare providers to deliver oral health services to underserved communities through digital connections with remote oral health service teams.[17]

The World Medical Association (WMA) Declaration on Medical Ethics and Advanced Medical Technology (2002) stresses the importance of prioritizing patient safety during the development and implementation of medical technology. The WMA underscores the significance of professional confidentiality, ensuring patient privacy while also advocating for the right to receive quality care. The declaration highlights the responsibility of physicians to cooperate with other healthcare providers involved in patient care to synchronize medical treatments. Confidentiality encompasses various aspects, as outlined below:[18]

- 1) Any identifiable details concerning a patient's health status, medical condition, diagnosis, treatment, and any other personal information must remain confidential, even posthumously. However, exceptions may apply, allowing descendants to access information essential for understanding their health risks.

- 2) Disclosure of confidential information is permissible only with explicit consent from the patient or when explicitly authorized by law. Information may be shared with other healthcare providers solely on a "need-to-know" basis, unless the patient has provided explicit consent.
- 3) All identifiable patient data must be safeguarded, and the level of protection should match the method of storage. Additionally, measures must be taken to protect the human material from which identifiable data can be obtained.

## **2.2 Teledentistry-Based Medical Practices Viewed From Ethical and Legal Aspects**

Etymologically, there are two opinions regarding the origin of ethics; first, ethics originating from English, which is 'ethic' meaning system, moral principles, rules, or ways of behaving. Second, ethics originating from Greek, which is 'ethikos' meaning usage, character, habit, tendency, and attitudes that involve conceptual analysis such as right-wrong, containing the search for moral character or moral actions and the search for a morally good life. Thus, ethics is the science of what is commonly practiced or scholarly related to customs and habits.[19]

For centuries, the term bioethics or medical ethics has been widely known. The principles of bioethics form the cornerstone of ethical considerations in the field of medicine. Bioethical principles consist of four bioethical principles including beneficence (actions aimed at the safety and well-being of patients), non-maleficence (primum non-nocere, first do no harm, or avoiding actions that are likely to worsen or harm patients), autonomy (respecting patient rights), and justice (prioritizing fairness in resource distribution).[20] A doctor, when practicing medicine, is bound by the medical ethics outlined in the Indonesian Medical Code of Ethics 2012 (KODEKI 2012).

“Physicians must make decisions professionally and independently, while maintaining the highest level of professional behavior.” It is stipulated in Article 2 of the KODEKI. Professional decisions can only be made after a physician conducts a thorough, careful examination of the patient to establish an accurate diagnosis and provide appropriate therapy according to medical service standards. However, telemedicine practices prevent doctors from meeting patients face-to-face. Consequently, doctors are unable to conduct a comprehensive physical examination of the patient. While telemedicine can facilitate observational physical examinations or visual inspections through image or video methods, it cannot accommodate non-observational physical examinations (such as palpation, percussion, or auscultation) or those requiring specific maneuvers.

Physicians need to recognize that telemedicine services may not fully capture all clinical information about patients. Additionally, physicians must carefully consider whether the incompleteness of clinical information can be used to establish a diagnosis and provide adequate therapy for the patient. The incompleteness of clinical information about the patient's condition can put doctors at risk of making incorrect medical decisions.[21] Medical practice through telemedicine cannot adhere to the standards of medical care because doctors do not conduct a complete physical examination of the patient. This contradicts the principles of beneficence (actions intended for the safety and well-being of patients) and non-maleficence (refraining from actions that may harm patients or provide no benefit).

Communication stands as the cornerstone of the doctor-patient relationship. However, telemedicine, lacking in-person interactions, can pose challenges, potentially undermining this relationship. The absence of direct face-to-face interaction may erode trust and hinder the patient's autonomy in the decision-making process.[22] Nonetheless, the decision-making

process holds paramount importance as it entails self-determination, which entails respecting the patient's right to make decisions.

The principle of justice, a fundamental aspect of bioethics, must be taken into account in the implementation of telemedicine in Indonesia. Fairness towards doctors who provide telemedicine services is essential, particularly concerning the honorarium or compensation for medical services rendered, as stipulated in Minister of Health Regulation No. 20 of 2019. According to Article 17 of this regulation, doctors offering telemedicine services are required to uphold professionalism round the clock, entitling them to adequate medical fees or compensation. However, the regulation lacks elaboration or specific procedures regarding the financing of telemedicine services and compensation for doctors. Moreover, there remains a disparity in fee distribution between doctors and health application providers offering telemedicine services, owing to the absence of detailed regulations providing clear guidelines on fee distribution.

In addition to the above issues, the International Code of Medical Ethics of the World Medical Association (WMA) (1949, amended version 2006) stipulates that doctors must respect patients' rights to confidentiality; "It is ethical to disclose confidential information when there is a real and immediate threat to the patient or others, and this threat can only be eliminated by breaching confidentiality".[23]

As with any information technology system, concerns arise regarding the security of data transmitted through teledentistry, including issues related to copyright and ownership. Similar to other online platforms, teledentistry systems are susceptible to hacking and data theft. Of primary concern from the patient's perspective is the confidentiality of their data. Patients should be made aware of the potential for data loss despite maximum precautions, as well as the possibility of incorrect diagnoses or treatment failures due to technological errors or malfunctions. Challenges regarding copyright and data ownership stem largely from the absence of adequate legal frameworks governing teledentistry and telemedicine. Regulations pertaining to privacy, security, remuneration, taxation, jurisdiction, definitions, and malpractice are notably lacking.[24]

The groundwork for regulations enabling the integration of telemedicine in Indonesia was laid in 2015, marked by the issuance of Minister of Health Regulation (Permenkes) Number 90 of 2015 regarding the Provision of Health Services in Remote and Very Remote Health Service Facilities. Article 15 of this regulation delineates telemedicine as one of the health services provided in healthcare facilities situated in remote and very remote regions. Health services utilizing technology (telemedicine) can help reduce the workload of medical and health personnel, as well as patients, so that it is hoped that both parties can provide information more quickly, smoothly, and with guaranteed security.[25] In 2017, the issuance of Minister of Health Regulation Number 46 of 2017 concerning the National E-Health Strategy outlined telemedicine as a component of E-Health implementation, aimed at addressing infrastructure, communication, and human resource challenges. Subsequently, in 2019, Minister of Health Regulation Number 20 of 2019 concerning the Implementation of Telemedicine Services Between Health Service Facilities was introduced, with the objective of bringing specialized healthcare services closer and enhancing service quality, particularly in remote areas, through the utilization of health information technology. Amidst the COVID-19 pandemic, the Indonesian Medical Council released Indonesian Medical Council Regulation (Perkonsil) Number 74 of 2020 regarding Clinical Authority and Medical Practice through Telemedicine During the COVID-19 Pandemic. However, with the government's decision to lift the COVID-19 pandemic status on June 21, 2023, Perkonsil 74/2020 became obsolete.

Minister of Health Regulation No. 20 of 2019 delineates that telemedicine services are exclusively reserved for inter-facility healthcare communication. These services encompass teleradiology, teleconsultation with medical professionals, teleelectrocardiography, and other specialized medical services. The regulation specifies that only hospitals are authorized to offer these consultations, while health facilities seeking such consultations may include hospitals, primary-level facilities, and others. Additionally, Minister of Health Regulation No. 20 of 2019 primarily governs the types of services available, the covered financing, the rights and responsibilities of both requesting and providing health facilities, the financing mechanisms for telemedicine services, as well as the supervision and oversight procedures. Consequently, the regulation solely addresses the provision of healthcare services through telemedicine between healthcare facilities[26].

From the explanation provided, it is apparent that the existing regulations in Indonesia, namely Minister of Health Regulation No. 20 of 2019 and the recent Health Law, focus on governing telemedicine conducted within healthcare facilities. However, these regulations do not extend to the practice of telemedicine between doctors and patients independently through health application intermediaries, a practice increasingly common among the public. Notably, these health applications are not officially recognized as healthcare facilities, suggesting that they should not be permitted to deliver healthcare services.

The rapid advancement of technology, readily embraced by society, has left the law struggling to catch up. Innovations in healthcare have outpaced legal developments in the field. Presently, there is a lack of regulation concerning the delivery of medical services via telemedicine facilitated by applications that are not recognized as healthcare service facilities. However, the use of telemedicine is increasingly favored by the public even though the COVID-19 pandemic has been declared over. The existing regulations are not comprehensive enough to serve as a legal framework for telemedicine in Indonesia. Allowing technological changes and advancements to occur without adjusting legal rules is akin to letting these technological changes and advancements unfold in a state of uncertainty and disorder.

### **3 Closing**

#### **3.1 Conclusion**

Telemedicine is one form of technological advancement in healthcare. Initially, telemedicine in Indonesia was used to achieve healthcare equity, improve healthcare quality, especially in remote areas, and was only implemented within the scope of inter-healthcare facility (fasyankes) communication. The COVID-19 pandemic has brought telemedicine to the forefront of public awareness. Telemedicine is now not only utilized between healthcare facilities but also between doctors and individual patients via healthcare application intermediaries. After the lifting of the COVID-19 pandemic status in Indonesia, telemedicine continues to be popular and increasingly used by the public. Despite providing many benefits and conveniences, practicing medicine through telemedicine also poses various issues, especially when related to ethics and law.

From an ethical perspective (the 4 principles of bioethics), the practice of medicine through telemedicine often overlooks the principles of medical ethics. From a legal standpoint, the regulations facilitating telemedicine in Indonesia are currently not comprehensive enough. Existing legislation does not regulate the provision of medical practice through telemedicine

between doctors and patients personally via healthcare application intermediaries, which is currently prevalent among the public.

### 3.2 Recommendation

The government, along with the Ministry of Health, other relevant ministries, and professional organizations in the healthcare sector, can collaborate and synergize to formulate more detailed regulations. These regulations should not only cover the provision of telemedicine by healthcare facilities but also address the practice of medicine through telemedicine mediated by healthcare applications. More detailed and comprehensive regulations are expected to accommodate the implementation of telemedicine in Indonesia, thus providing legal certainty and security for both patients and doctors.

### References

- [1] A. E. P. E. Al, "Pengaturan Perizinan Penyelenggaraan Pelayanan Kesehatan Berbasis Online Di Indonesia," *Mendapo J. Adm. Law*, vol. 3, no. 3, 2022.
- [2] R. Riswadi and N. Syaf, "Implementation of the Appointment of Judges in District Courts Based on Law Number 49 of 2009 regarding General Courts," 2023. doi: 10.4108/eai.28-10-2023.2341794.
- [3] Y. Munaf, *State Administration Law Riau*. Riau: Marpoyan Tujuh Publishing, 2016.
- [4] V. Kurniawan, M. Barthos, and B. Nurdin, "Law Enforcement Against Trademark Counterfeiting," 2023. doi: 10.4108/eai.6-5-2023.2333533.
- [5] Y. Seputra, A. Rodoni, and M. Meirinaldi, "Analysis of Foreign Exchange Using Neural Network and Adaptive Neuro Fuzzy Inference System (ANFIS)," 2022. doi: 10.4108/eai.16-4-2022.2319723.
- [6] M. Ekatama, A. WA, P. Astuti, and Y. CN, "The Effect of Motivation, Education Level, And Work Experience on Employee Work Productivity," 2022. doi: 10.4108/eai.16-4-2022.2319721.
- [7] L. Kusumawati, R. Sara, and R. Riswadi, "Law Enforcement on Pharmacists Negligence in Giving Medicines to Patients," 2023. doi: 10.4108/eai.12-11-2022.2327281.
- [8] P. Biantoro, S. Suparno, and A. Budiarto, "Law Enforcement based on Community Social Culture Approach," 2023. doi: 10.4108/eai.12-11-2022.2327299.
- [9] H. Mujoko, S. Priadana, M. Meirinaldi, and D. Bahagia, "The Effect of the Existence of Industrial Area, Number of the Work Force, Community Welfare on Minimum Wages in Banten Province," 2023. doi: 10.4108/eai.12-11-2022.2327274.
- [10] T. Asmoro, R. Rodoni, and M. Meirinaldi, "Factors Affecting Export Performance Indonesian Fashion Creative Industry," 2022. doi: 10.4108/eai.30-10-2021.2315830.
- [11] S. Sutarip, "The Legitimate Parts of Arrangement Approaches in Managing the Coronavirus Pandemic," 2022. doi: 10.4108/eai.16-4-2022.2320068.
- [12] S. Prasetyorini, "The Scientific Synergy in Handling the Crisis of The Covid-19 Outbreak: Privacy Protection Vs. Public Information Transparency," 2022. doi: 10.4108/eai.16-4-2022.2320047.
- [13] S. Mulatsih, H. Subiyantoro, Y. Yolanda, and M. Masruri, "Analysis of the Effect of Financial Indicators and Ratio Sharia Banking on Capital Market," 2022. doi: 10.4108/eai.30-10-2021.2315854.
- [14] N. Saputra, E. Noerhartati, and A. Laila, "Leading MSME during COVID-19 Crisis by Utilizing Pro-social and Spirituality Approach," 2021. doi: 10.4108/eai.6-3-2021.2305975.
- [15] A. Muyassaroh and Syaiful, "Makna Pendapatan Bagi Profesi Guru Honorer Saat Pandemi Covid-

- 19,” *Pros. Semin. Nas. Ekon. dan Bisnis 1*, vol. 1, no. 1, pp. 134–160, 2022.
- [16] A. F. Rifai, *EDM (Ethics Decision Making) The Concept of Ethical Decision Making and Its Implementation in Nursing Practice Deepublish Publisher*, 2022. Yogyakarta: Deepublish Publisher, 2022.
- [17] U. Umar, “The Socio-Cultural Transformations among Samin Tribe in Response to COVID-19,” 2022. doi: 10.4108/eai.30-10-2021.2315754.
- [18] A. Rozi, A. Redi, and A. Budianto, “Legal Review Of Simultaneous Elections From The Perspective Of The 1945 Basic Act,” 2023. doi: 10.4108/eai.6-5-2023.2334516.
- [19] P. L. Moore and K. L. Lawrence, “The Essential Role of Human Service Nonprofits in Restorative Justice Policy Implementation,” *Nonprofit Policy Forum*, Sep. 2023, doi: 10.1515/npf-2022-0040.
- [20] H. Artono, “Legal Aspects on Financial Technology (Fintech) Peer to Peer (P2P) Lending that Declared Illegal by Otoritas Jasa Keuangan (OJK),” 2021. doi: 10.4108/eai.6-3-2021.2305968.
- [21] E. Prabowo and M. Barthos, “Health Law Review About Not Being Obligated to Show Negative Results of RT-PCR / PCR OR Rapid Antigen Tests on The Provisions of Domestic Travelers (PPDN) Who Have Been Vaccinated Three Times / Boosters in Indonesia,” 2022. doi: 10.4108/eai.16-4-2022.2319703.
- [22] M. O. R. Amtha R, Gunardi I, Astoeti T. E, “Characteristic Of Oral Medicine Patient Using Teledentistry During Covid-19 Pandemic.” p. 8, 2021.
- [23] P. Astuty, R. Afrianti, and K. Taufik, “Export Performance Improvement Strategy Indonesia During The Pandemic,” 2023. doi: 10.4108/eai.28-10-2023.2341784.
- [24] E. Pamungkas, “Constitutional Court and Legal Certainty Covid-19 Pandemic Status,” 2022. doi: 10.4108/eai.16-4-2022.2319712.
- [25] I. Indriyani and Z. Fakrulloh, “The Effectiveness of Budget Absorption in Pandemic Response,” 2022. doi: 10.4108/eai.16-4-2022.2320072.
- [26] B. Machrus, B. R. I. A., “Perlindungan Hukum Pasien Telemedicine Atas Kesalahan Dokter,” *J. Sos.*, vol. 1, no. 1, 2022.