

Analysis of Challenges and Perspectives of Telemedicine in the Mental Health Sector in Tunisia

Analyse des Enjeux et Perspectives de la Télémédecine dans le Secteur de la Santé Mentale en Tunisie

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ABSTRACT

The Presidential Decree-Law No. 318/2022 of April 8, 2022, established new specific legal foundations for telemedicine in Tunisia. In the field of mental health, telemedicine offers a significant opportunity to democratize care by making psychiatric services more accessible to a larger population. In a recent study, we assessed Tunisian psychiatrists' knowledge of telemedicine. Although they have a still limited understanding of the legal framework, they expressed a willingness to explore telemedicine for the management of mental disorders, thus demonstrating a growing interest in this new practice. The adoption of telepsychiatry facilitates a rapid response to care demands, particularly in underserved and remote areas. However, this evolution presents a series of new challenges. Legal, ethical, and administrative issues are emerging, requiring robust frameworks to ensure patient confidentiality, data security, and compliance with medical regulations. Moreover, ethical and deontological concerns must be addressed to maintain the integrity and professionalism of psychiatric practice.

In this article, we will detail the main points of the decree-law and its application in psychiatry, as well as the potential challenges associated with implementing telemedicine in the continuity of care in Tunisia, while navigating the complex landscape of new issues related to its application in psychiatry.

Key words: Telemedicine, Mental Health, Legal Aspects, Medical Ethics, Tunisia

RÉSUMÉ

Le décret-loi présidentiel n° 318/2022 du 8 avril 2022 a établi de nouvelles bases juridiques spécifiques pour la télémédecine en Tunisie. Dans le domaine de la santé mentale, la télémédecine offre une opportunité significative de démocratiser les soins, en rendant les services psychiatriques plus accessibles à une population plus large. Dans une étude récente, nous avons évalué les connaissances des psychiatres tunisiens sur la télémédecine. Bien qu'ils aient une compréhension encore limitée du cadre juridique, ils ont exprimé une volonté d'explorer la télémédecine pour la gestion des troubles mentaux, témoignant ainsi d'un intérêt croissant pour cette nouvelle pratique. L'adoption de la télépsychiatrie facilite une réponse rapide aux demandes de soins, particulièrement dans les zones mal desservies et éloignées. Cependant, cette évolution présente une série de nouveaux défis. Des questions légales, éthiques et administratives émergent nécessitant des cadres solides pour garantir la confidentialité des patients, la sécurité des données et la conformité aux réglementations médicales. De plus, des préoccupations déontologiques et éthiques doivent être prises en compte pour maintenir l'intégrité et le professionnalisme de la pratique psychiatrique.

Dans cet article, nous détaillerons les principaux points du décret-loi et son application en psychiatrie, ainsi que les défis potentiels liés à la mise en œuvre de la télémédecine dans la continuité des soins en Tunisie, tout en naviguant dans le paysage complexe des nouveaux enjeux liés à son application en psychiatrie.

Mots clés: Télémédecine, Psychiatrie, Santé mentale, Aspects juridiques, Éthique médicale, Tunisie

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INTRODUCTION

Telemedicine, since its inception, has been intricately linked with mental health and psychiatric practice. An early example of this convergence dates back to 1958 in the United States, during the initial experiments with telepsychiatry consultations. This historical account attests to the pioneering role of telepsychiatry as an early and enduring application of telemedicine (1).

Today, telemedicine, a catalyst for innovation and transformation in global healthcare systems, has emerged as a promising alternative. Telemedicine plays a crucial role in democratizing healthcare by eliminating geographical, economic, and temporal barriers that often limit access to healthcare services. In a context where technology is redefining medical paradigms, telemedicine offers unique opportunities to improve access to care, particularly in the field of mental health. After the COVID-19 pandemic, mental health, previously relegated to the background of medical concerns, now takes center stage in global health debates and challenges (2).

In a recent study, we explored the knowledge of this emerging practice among Tunisian psychiatrists. The results of this study revealed a still limited understanding of the legal framework of telemedicine, but they also underscored a significant interest in this new medical practice. Mental health professionals in Tunisia expressed a willingness to explore the opportunities offered by telemedicine in the specific context of managing mental health disorders (3).

This eagerness to explore telemedicine opportunities is part of a broader effort by various Tunisian entities, such as the National Telemedicine Committee, the National Authority for the Protection of Personal Data (INPDP), and the Tunisian Society of Telemedicine and e-Health, to promote and develop e-health. However, this involvement also exposes the digital health sector to a series of challenges, including economic factors such as the cost of care and the health insurance system, logistical and organizational issues like digital infrastructure, internet access, and computer equipment, as well as sociocultural obstacles such as the acceptance of digital culture and digital illiteracy.

In this paper, we will outline the main points of the decree law and its application in the field of mental health, as well as the main potential challenges associated with implementing telemedicine in the continuity of care in Tunisia.

ADVANCEMENTS AND REGULATORY CHALLENGES IN TELEMEDICINE IMPLEMENTATION IN TUNISIA

Historical evolution

Telemedicine has been a longstanding concept in Tunisia, with the establishment of the National Telemedicine Committee in May 1996 signaling its early adoption. This commitment to innovation was underscored by the connection between La Rabta Hospital and Paul Brousse

Hospital in Paris in October 1996, marking the nascent integration of telemedicine into the strategic information technology plan of the Tunisian Ministry of Health (4).

In Tunisia, the healthcare system needs to adopt innovative solutions to address the growing needs of the population. Telemedicine could play a strategic role in expanding access to services across various disciplines, including psychiatry and mental health, while reducing regional disparities. Despite these pioneering efforts, the legal framework for telemedicine in Tunisia only began to take shape recently. The passing of Law 2018-43 on July 11, 2018, amending Law 91-21 of March 13, 1991, was a significant milestone. This legislation established the legal framework governing the practice and organization of medical and dental professions, providing a crucial foundation for the regulation of telemedicine in the country (5,6).

In response to the challenges posed by the COVID-19 pandemic, the National Council of the Order of Physicians of Tunisia granted temporary authorization for teleconsultations in March 2020. This measure allowed physicians to conduct remote consultations, utilize telecommunications, engage in video conferences, and renew prescriptions for chronic conditions (7).

In the field of mental health, the experience of the the psychological support unit (CAP) in Tunisia demonstrated the relevance of telemedicine. These interventions did not strictly constitute telemedicine acts, such as teleconsultation or tele-expertise, but were rather remote guidance, without formal medical commitment or prescription of treatments. It was a form of medical regulation, as defined by the decree-law: the provision of remote medical response to a patient within the framework of medical triage practiced by emergency medical assistance services, in order to determine and initiate the most appropriate response to the nature of the call (8).

The CAP, established by the Ministry of Health, took the form of a telephone listening platform deployed during the lockdown period. More than 200 volunteer psychiatrists and psychologists participated in this initiative, offering remote psychological support to people in need. In total, the CAP registered 2111 calls, 1781 of which came from individuals seeking help for themselves, 168 for a family member, and 161 for their children. It is noteworthy that 38.4% of callers had a psychiatric history and experienced an exacerbation of their psychological disorders during the lockdown, largely due to difficulties in accessing their treating physicians. In the triage algorithm set up by the CAP, if a person presented with a psychiatric emergency, they were connected with a psychiatrist in their region. If the person was already being followed by a psychiatric service, their call was transferred to the corresponding service (8,9).

A major challenge lay in the fact that, despite the capacity of the CAP unit to conduct a psychological assessment of the population benefiting from this intervention and to ensure a certain level of medical follow-up, it did not provide a complete medico-psychological evaluation nor establish a treatment plan. Furthermore, medical prescriptions were not authorized, and the experience

of the CAP unit primarily focused on teleorientations, without implementing genuine teleconsultations.

This initiative, aimed at supporting the general population during the COVID-19 health crisis, was the first application of telemedicine in Tunisia. This experience highlighted the adaptive role of telemedicine in emergency situations, particularly in the context of tele-guidance, where healthcare professionals were able to remotely guide and direct patients to appropriate resources and care. It also represents a good model of medico-economic-social volunteering (8).

Current regulatory framework

Further refining the implementation of telemedicine, Presidential Decree No. 318/2022 was published in the Official Journal of the Tunisian Republic on April 8, 2022. This decree represented a significant advancement in the regulation of telemedicine, providing a framework for its practice. The decree-law on telemedicine is structured into four chapters with a total of 29 articles. These chapters cover various aspects: general provisions (Articles 2 to 4), areas of application (Articles 5 to 7), general conditions of practice including authorizations (Articles 8 to 13), and technical requirements (Articles 14 to 18), and exercise guarantees (Articles 19 to 23), as well as payment methods (Articles 24 to 25), and final and transitional provisions (Articles 26 to 29 (10).

In alignment with the framework established by Presidential Decree, the Ministry of Health recently took an important step to ensure the effective implementation of telemedicine. On June 13, 2024, two ministerial application texts were published. The first text, composed of ten articles, provides specific guidelines for the practice of telemedicine within each medical specialty, refining the application of the regulations and offering clear directives for healthcare professionals. The second application text outlines the required documents and data necessary for obtaining authorization to establish a telemedicine platform or to carry out telemedicine acts within the framework of a medical cooperation project (11).

Legal issues of Telemedicine in psychiatry

Telemedicine follows the same principles as traditional medicine, although medical errors may manifest differently in this context. The physician remains fully responsible for their professional judgment, thus bearing their criminal, civil, or disciplinary liability (12).

In psychiatry, telemedicine primarily applies to three areas: teleconsultation (between psychiatrist and patient), teleexpertise (between psychiatrist and a physician of another specialty solicited for an opinion), and teleassistance (between a psychiatrist and other professionals, such as psychologists). This practice raises complex legal issues, particularly regarding data confidentiality, information security, and compliance with medical regulations. Additionally, challenges related to psychiatric emergencies and cross-border telepsychiatry require special attention to ensure the proper and secure

application of these practices.

Administrative requirements for Telemedicine

The current legal framework sets the groundwork for practicing telemedicine in Tunisia. A dedicated section mandates obtaining two authorizations from the INPDP and one from the Minister of Health for establishing telemedicine platforms. According to Article 11 of the decree-law, a telemedicine platform can only be utilized if the involved physician has a formal agreement with the platform owner. For private sector physicians, this agreement must be approved by the relevant professional order and reported to the Ministry of Health. In the public sector, the agreement requires direct approval from the Ministry of Health (10).

Obligation to inform and obtain Consent

In telemedicine, every patient must be fully informed about their health condition, necessary additional examinations, proposed treatments, potential benefits and complications, and the right to accept or refuse treatment. Patients must also be made aware of the implications of using technological devices (accessibility, ease of use, potential risks). Physicians are responsible for providing clear, precise, and personalized information to enable informed decision-making. The Tunisian Medical Code of Ethics, in Article 10, affirms the patient's right to choose their physician, although this principle may be limited during tele-expertise or tele-assistance (13). In such cases, the physician must inform the patient of the need to consult a colleague or another healthcare professional (such as a psychologist or a second psychiatric opinion) and obtain their consent to exchange medical information via information technologies, following Article 23 of the presidential decree. Articles 19 and 21 of the decree-law reiterate these obligations, emphasizing that information and consent must be recorded in the electronic medical record (10).

Confidentiality, security, and obligation of medical secrecy

Protecting confidentiality is a legal obligation for physicians, which must be upheld in all situations, including the use of modern communication technologies. According to Article 254 of the Tunisian Penal Code and Articles 8 and 9 of the Medical Code of Ethics, doctors are required to safeguard the confidentiality of information obtained in their professional practice (14). In telemedicine, confidentiality issues arise on two fronts: during the telemedicine act itself and during the transfer and storage of data.

Article 22 of the decree-law specifies the nature of data collected during the telemedicine act. Article 23 conditions the practice of telemedicine by outlining security and confidentiality guarantees. Data access is prohibited for the platform owner and is restricted to the requesting or consulted physician, or participating healthcare professionals after the patient has been

informed and has given consent (10).

In light of these data protection measures, Article 9 of the application text states that medical prescriptions, reports, and other documents related to telemedicine must be transmitted securely to the patient or their legal guardian after the physician has explained them. This process ensures that patients fully understand their medical information and treatment plans. Furthermore, Article 4 of the application text emphasizes that medical certificates cannot be issued remotely (11).

The technological system used presents a second layer of concern regarding confidentiality. Article 15 of the decree-law outlines technical and security requirements. Article 16 specifies that data must be hosted in Tunisia by a national Cloud service provider. The same article addresses the archiving of electronic medical records, stating that data transfer and storage occur in a central database managed by the technical services of the Ministry of Health (10).

Confidentiality and medical secrecy are especially delicate matters, particularly when patients are unable to provide consent to care. In such cases, psychiatrists may need to inform the family to ensure consultation and treatment adherence. This can pose a challenge in telemedicine, which is not yet fully governed by specific ethical guidelines for psychiatry.

In India, telepsychiatry practice allows an individual to authorize a family member or designated representative to initiate a telepsychiatry consultation. These consultations can take place with or without the patient present but always require the patient's explicit consent. This aspect should be considered when implementing telepsychiatry in Tunisia for certain patients whose care must involve a third party (14).

MEDICO-LEGAL RESPONSIBILITY

Telemedicine introduces new challenges and additional legal risks compared to traditional medical practice. The use of telemedicine raises complex legal questions that require careful consideration, not only from physicians but also from all participants in the telemedicine process (treating physician, requesting physician, requested physician, healthcare professionals, healthcare facilities, and Information Technology support providers). In Tunisia, there is no clearly defined legal or regulatory framework concerning the distribution of responsibilities among the various actors involved in telemedicine, including third-party technology providers.

In cases of telecommunication system security failures, data loss, hardware or software malfunctions, or any other situation where their product or service is deemed to have caused harm, the provider's liability is invoked. This constitutes the responsibility of a third-party technology provider (14).

Responsibility in teleconsultation

In teleconsultation, physicians must be meticulous in diagnosing, leveraging all available tools. The legal liability

framework remains consistent with that of traditional consultations. Therefore, a psychiatrist, like any other physician using telemedicine, can be held liable in civil, criminal, administrative, and disciplinary matters (15).

Responsibility in tele-expertise

In telemedicine, responsibility may lie with the requesting physician who makes the final decision or on the consulted physician if a mistake occurs, such as providing an opinion outside their area of expertise, omitting critical details, or experiencing technical issues. Liability may also be shared if both physicians are at fault. In all cases, both professionals must act with integrity and diligence, clarify situations that may impact their judgment, and abstain from offering an opinion if necessary. Each practitioner bears personal responsibility by adhering to the principle of due diligence. The consulted physician must consider the limitations of the information and technologies used, seek additional expertise if needed, and clearly state the limits of their recommendation. They may refuse to proceed with tele-expertise if the quality of the provided medical information does not meet standard image clarity requirements. The requesting physician is responsible for the information collected and transmitted, the information given to the patient, and the final decision regarding diagnosis or treatment (12,14,15,16).

Responsibility in tele-assistance

In tele-assistance, the liability framework is similar to that of teleconsultation or tele-expertise when medical acts are involved. In the diagnostic or therapeutic process, physicians share responsibility. For example, if a tele-assistance session involves two psychiatrists and a psychologist, the second psychiatrist is accountable for the outcome of their assistance, while the psychologist is responsible for the diagnostic guidance provided (12,14,15,16).

Legal issues of cross-border psychiatry

According to Article 13 of the decree-law, authorization for cross-border medical practice must be obtained following a prior declaration to the Ministry of Health and the relevant professional orders. The use of telemedicine can facilitate cross-border psychiatric practice, which raises additional legal questions. Issues of jurisdiction, regulation, and compliance with the laws and standards of each country must be considered. The principle of territoriality of laws means that the laws of the country where an offense occurs apply, creating difficulties in cases of disputes involving a Tunisian physician who makes an error during a teleconsultation with a foreign patient wishing to pursue legal action (14,15).

Specific Situation: Telemedicine and psychiatric emergencies

The practice of telemedicine in the context of a psychiatric emergency, such as a high risk of suicide with patient

refusal of treatment, presents significant challenges. According to Article 11 of Law 92/83 of August 3, 1992, amended by Law 40 of May 3, 2004, concerning mental health and conditions for hospitalization due to mental disorders, involuntary hospitalization is indicated in such situations (17). These critical yet common situations raise questions about the psychiatrist's medical responsibility when managing a psychiatric emergency via teleconsultation. It is crucial to determine whether family contact should be systematically included in the electronic medical record in high-risk situations, whether telemedicine allows for initiating the procedure for involuntary hospitalization, and how the psychiatrist could contact the public prosecutor to report such a situation. If the physician refuses the teleconsultation or if the patient refuses to seek emergency care and commits a suicidal act, could the physician be held liable for failing to assist a person in danger ?

This point highlights the need for caution in applying telemedicine to psychiatry in Tunisia. Although some studies demonstrate the effectiveness of managing suicidal crises via teleconsultation, the Quebec Agency considers it contraindicated. Similarly, the delivery of bad news and situations involving high instability or danger are also advised against teleconsultation (18,19). Therefore, it is crucial to identify, within our context, the situations where telepsychiatry would be inappropriate while considering the specifics of our Tunisian healthcare system.

Article 4 of the application text regarding telemedicine practice requires the physician to assess the appropriateness of teleconsultation based on the patient's clinical condition, explicitly excluding cases where effective consultation is not possible. This emphasizes the importance of clinical judgment in the delivery of telemedicine. In conjunction with this, Article 7 specifies that contraindications to telemedicine must be determined by a decision of the Minister of Health, following consultation with the medical specialty colleges and the medical councils. In addition to general contraindications applicable to all telemedicine procedures, this provision implies that specific contraindications must also be defined according to the particular medical specialty performing the telemedicine act (11).

BIOETHICAL ISSUES OF TELEMEDICINE IN TUNISIA

Ethical principles in the Tunisian context

The advent of new technology should not lead to the creation of a new ethics but may require an adaptation of existing principles to account for the new situations it generates (20). Thus, the use of telemedicine in psychiatric practice can raise significant ethical issues, and among the primary concerns, it is legitimate to question the preservation of ethics and the future of the doctor-patient relationship. The HAS encourages physicians to carefully assess the relevance of a teleconsultation based

on the patient's clinical situation, access to their data, and their ability to use digital tools (21).

In Tunisia, where there is a shortage of psychiatrists and limited psychiatric liaison services in hospitals, telepsychiatry could be a highly effective solution for enhancing access to mental health care. Additionally, telemedicine has the potential to combat the stigma associated with mental health disorders by providing a more discreet and convenient way to access psychiatric consultations, which are often viewed negatively in our sociocultural context (22).

In the context of telemedicine, certain ethical precautions inherent to this new practice must be considered: security, confidentiality of medical records, and respect for patient privacy. The 2022 ethical manual from the WMA emphasizes these requirements as duties toward the patient, asserting that physicians should prioritize face-to-face consultations and treatments when medically appropriate (23).

In Tunisia, the principle of non-maleficence may be initially challenged with the adoption of telemedicine. This issue arises from the fact that physicians may lack the training and tools necessary for effective communication technology application. This lack of preparation could lead to breaches of confidentiality and compromise the quality of patient care, potentially undermining another ethical principle: professionalism. It is essential to ensure that professionalism is upheld even before the full implementation of telemedicine.

Furthermore, the principle of equity may be compromised in the application of telemedicine in psychiatry. Telemedicine could inadvertently hinder equity by limiting access for certain patients. For instance, individuals with severe mental disorders, such as certain forms of schizophrenia or deep neurocognitive impairments, might struggle to use the Internet for communication with their healthcare provider (24). Additionally, in the Tunisian context, the principle of equity might be compromised due to limited internet coverage in some regions. Effective mental health telecare, including telepsychiatry, requires a high-quality internet connection. According to AETMIS, the minimum threshold for adequate image and sound quality in psychiatric teleconsultations is 384 kbps (19). This speed is also recognized as minimal by the ATA, as internet connection quality can significantly impact the consultation quality and, consequently, the effectiveness of mental health care. The ATA also provides recommendations on other factors such as bandwidth, camera position, lighting, monitor size, and room environment, although these are not deemed mandatory (25). Currently, in Tunisia, high-speed and very high-speed internet is not widespread. According to the latest report from the International Telecommunication Union, the subscription rate for fixed-line high-speed internet services was 12.2 per 100 inhabitants in 2021, raising questions about the feasibility of implementing telemedicine from patients' homes (26).

Telepsychiatry and the Doctor-Patient relationship

Telemedicine transforms the interaction between

doctors and patients by introducing technology as a new component. This shift can complicate the relationship, potentially affecting trust, as the physical distance and virtual nature of the consultation might diminish the empathy perceived by the patient (27). Furthermore, the lack of non-verbal cues (facial expressions, gestures, eye contact, tone of voice) during teleconsultations can hinder therapeutic communication. Some specialists recommend alternating with face-to-face consultations to ensure comprehensive and high-quality psychiatric care (28).

Article 3 of the application text states that the first remote consultation, with the exception of tele-imaging, may only be conducted for patients who have already been physically examined by the physician. An exemption may be granted by the Minister of Health, based on the advice of the specialty colleges, for foreign patients or for certain pathologies that have implications for public health (11).

One important sociocultural issue to consider is the acceptance of telemedicine by Tunisian patients, as this method might be perceived as a form of foreign care, potentially leading to reluctance toward this new digital health culture and affecting the doctor-patient relationship. Despite these concerns, a recent study conducted by Jemli et al., examining the interest of patients followed in both public and private sectors in digital mental health services, reveals a strong interest in video teleconsultation with their therapists, as well as in the use of digital tools for psychoeducation (29).

PERSPECTIVES AND RECOMMENDATIONS FOR TELEMEDICINE IN MENTAL HEALTH SECTOR IN TUNISIA

Telemedicine is revolutionizing access to care, optimizing medical resources, and enhancing collaboration among healthcare professionals. In Tunisia, it can address the challenges of the healthcare system. To fully realize its benefits and ensure successful implementation, it is essential to address the potential challenges related to telemedicine. To identify these challenges, it is crucial to consider existing obstacles highlighted in the literature. A meta-analysis conducted by Clemens Scott Kruse et al., which reviewed 30 articles, identified 33 obstacles occurring with a frequency of 100 occurrences across these studies. This analysis revealed several key issues, including technically challenged staff (11%), resistance to change (8%), cost (8%), reimbursement (5%), patient age (5%), and patient education level (5%) (30).

Given these insights, healthcare professionals must be trained in telemedicine's technical, legal, and ethical aspects to comply with current standards. Professional orders, training institutions, and regulatory bodies must also support the transition to digital and connected medicine. An open dialogue among healthcare professionals, patients, health authorities, legislators, and industry stakeholders is essential to anticipate and address these challenges effectively. This collaborative approach will help continuously adapt the legal, ethical, and deontological frameworks to ensure (Table 1).

Table 1. Recommendations for integrating Telemedicine in mental health care in Tunisia

Category	Challenge	Recommendation
1. Legal framework and responsibilities	Despite Presidential Decree No. 318/2022, aspects of the legal framework related to telemedicine require clarification, including the distribution of responsibilities among actors, third-party liability, cross-border medicine, and emergency management in psychiatry.	Develop a precise legal framework defining the responsibilities of the various actors involved in telemedicine, considering situations that may lead to disputes in psychiatry, such as emergencies, suicidal risks, homicidal plans, involuntary hospitalization, and family intervention.
2. Ethical standards and confidentiality	The ethics of telemedicine, including data confidentiality and respect for patient autonomy, must be rigorously addressed.	Integrate the ethical issues of telemedicine into Tunisian ethics committees and establish guidelines ensuring a quality doctor-patient relationship.
3. Training and education	The need to train professionals in new technologies is crucial for the success of telemedicine.	Integrate continuous training programs and educational initiatives targeting gaps in new technologies and remote consultations. These training programs can involve various stakeholders, including doctors, lawyers, and information technology specialists.
4. Guides and treatment protocols		Develop a national guide for psychiatrists for the practice of telemedicine, including treatment protocols adapted to mental disorders, integrating telepsychiatry as an option for remote care. Fully leverage the various aspects of telemedicine, particularly teleconsultation and telemonitoring, to implement large-scale psychological interventions for the Tunisian population during crises with psychological implications, with the aim of facilitating care and optimizing the effectiveness of interventions.
5. Socio-cultural perception	The public perception of telemedicine in mental health requires transformation.	Conduct information and awareness campaigns to demystify telemedicine, dispel prejudices, and foster increased social acceptance.

Abbreviations

INPDP: National Authority for the Protection of Personal Data
CAP : the psychological support unit
HAS : The French National Authority for Health
WMA: World Medical Association
AETMIS: Agency for the Evaluation of Health Technologies and Modes of Intervention
ATA: American Telemedicine Association

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