

Healthcare in Virtual Spaces: A Comparative Analysis of Iranian and American Telemedicine and Healthcare History, Regulations and Challenges

Elahe Marandi*
Hasti Memarian

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Abstract

This essay offers a comparative analysis of health law and telemedicine in Iran and the United States. It explores unique aspects of healthcare systems, regulations, challenges, and opportunities in both nations, tracing the historical development of health law and virtual health from inception to modern times. Specific challenges and opportunities exist within each country's healthcare systems, telemedicine practices, and regulations. For instance, in Iran, the coexistence of traditional and modern legal frameworks makes it essential to ensure that the laws are updated. The United States has a complex landscape of virtual health that needs to be maintained and integrated. What is similar in both countries is the importance of privacy. The analysis emphasizes the importance of adapting legal frameworks to accommodate technological advancements while protecting patient interests. Enhancing health laws and expanding telemedicine capabilities in both countries can improve access to virtual healthcare and enhance the quality and safety of patient care.

Keywords: comparative analysis, health law, telemedicine, virtual health.

Elahe Marandi (*Corresponding author): Department of Law, Faculty of Social Sciences and Economics, Alzahra University, Tehran, Iran. (Email: E.marandi@alzahra.ac.ir, ORCID: <https://orcid.org/0000-0002-0083-8511>)

Hasti Memarian: Law Bachelor Graduate, Alzahra University, Tehran, Iran. (Email: Hastimemarian0@gmail.com, ORCID: <https://orcid.org/0009-0003-0417-8201>)



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Introduction

Healthcare systems have gone through significant changes all around the world and telemedicine is a result of these changes. Bringing together digital platforms and telecommunication technologies into healthcare delivery, often called telemedicine or virtual health, has shown a different way of providing healthcare services. This improvement hence has the potential to improve healthcare accessibility.

Telemedicine means providing healthcare and related services using phones, computers, and other digital technologies. This includes medical treatment, educating patients and providers, giving health information, and supporting self-care. It improves the convenience and accessibility of healthcare as a valuable tool for maintaining health and seeking medical advice through technology. Patients can have sessions with their healthcare provider from a healthcare facility using a virtual space (Catalyst, 2018).

Despite the advancements and new ways to communicate and use technology in healthcare, there is still a need for regulations. There have been laws regulating virtual healthcare systems to avoid problems. These laws include keeping good relationships between patients and healthcare providers, keeping information private, ensuring patient satisfaction, and using technology to provide care based on evidence and clinical benefits.

Despite their differences in culture, politics, and economy, countries have a shared interest in using telemedicine to address healthcare challenges, this includes Iran and United States. The goal is to understand better the unique aspects, challenges, and opportunities Iran and the United States face while improving its healthcare system.

The changing healthcare system shows the need to look at and compare their approaches towards virtual health while as telemedicine grows each day, it brings up different legal issues and problems.

Studying the different aspects and legal frameworks for telemedicine in these two countries is crucial for understanding how healthcare changes in different cultural and political settings and also how to make it better.

Therefore, in this essay, we look at virtual healthcare's legal and historical aspects in Iran and the USA. We compare the two countries to show their challenges and opportunities in creating fair, safe, accessible, and modern healthcare systems.

Historical Development of Iranian Healthcare

Iran has a history of almost 70 years of healthcare development planning. This includes six constructional plans before the Islamic Revolution, as well as six economic, social, and cultural development plans.

Public healthcare in Iran began in 1851 with the establishment of the first medical school, Darol-Fonun, during the Qajar dynasty. At the same time, the “House of Hygiene”, the first national public health institution, was founded, focusing on quarantines and vaccination efforts. In 1941, a campaign was launched to address syphilis and other sexually transmitted diseases, but it was limited to Tehran due to funding constraints. That same year, the Ministry of Wellbeing was established, later becoming the Ministry of Health and Medical Education (MoHME) in 1985.

In ancient times, Persians worked to regulate medicine and protect the rights of patients. This has led to an interest in medical ethics and regulations in Iran over the past two decades. In 1993, the first International Congress of Health Ethics was held in Tehran from Jul 14 to 16th. This event brought together physicians, religious scholars, lawyers, and philosophers to discuss health ethics issues and future programs in Iran. The goal was to increase awareness and understanding of health issues among professionals and the public and sensitize policymakers. In 2002, the Ministry of Health and Health Education (MOHME) introduced an ongoing lead to develop a national strategic plan for health regulations to improve the quality of healthcare in Iran. This involved compiling official codes and guidelines in various fields of bioethics to serve as mutual frameworks for professional ethical conduct. Special educational courses and academic degrees were also suggested to provide the necessary human resources to implement practice ethics nationwide. The plan also included establishing a comprehensive database portal and enabling effective national and international cooperation in health ethics. Furthermore, setting up appropriate mechanisms for legal and ethical performance evaluation and popularizing initiatives by nominating them for national prizes were considered to enhance the value of ethics in society (Zahedi et al., 2009).

The country’s public healthcare system focuses on controlling diseases and improving healthcare for mothers and children. After the revolution, the government worked on improving public health and implementing population control measures. Efforts to enhance primary healthcare focus on improving services and ensuring more people can access the care they need (Doshmangir et al., 2020).

As telemedicine expanded worldwide, it also grew in Iran. These services offered similar health outcomes to traditional in-person patient encounters, provide greater satisfaction to patients, and may be cost-effective. Telemedicine services allowed real-time interactions between patients and providers, including phone conversations, online communication, and home visits. Many activities, such as reviewing medical history, performing physical examinations, psychiatric evaluations, and

ophthalmology examinations, can be performed comparably to traditional face-to-face visits (Salehahmadi & Hajjaliasghari, 2013).

Iran has recognized the benefits of telemedicine in improving healthcare access, particularly in remote areas. While Iranian health policy historically focused on expanding physical infrastructure, the significance of Telemedicine has become more apparent. The legal foundation for telemedicine in Iran can be traced back to the Health Transformation Plan (HTP) introduced in 2014 (Nasiripour, 2012).

The COVID-19 pandemic has made virtual health and telemedicine more significant, especially in Iran. The use of telemedicine to a greater extent during the pandemic has shown that we really need to enhance it and also, establish clear legal and regulatory rules for this area (Hajizadeh & Monaghesh, 2021).

In conclusion, the historical development of Iranian health law reflects a rich and complex journey influenced by cultural heritage, political changes, and the pursuit of modernization. The history of Iranian health law reflects a dynamic process of progress and challenges in the pursuit of equal and accessible healthcare for all citizens.

Telemedicine and Healthcare Legal Framework in Iran

Telemedicine laws and regulations have been introduced to govern the practice of telemedicine in Iran, addressing data security, patient privacy, and the licensure and certification of healthcare professionals involved in telemedicine. Telemedicine raises legal and regulatory questions about practicing medicine across different areas.

Currently, telemedicine in Iran operates within a legal framework that includes regulations related to licensing and approval. However, there is still room for further development of Telemedicine laws to ensure telemedicine's safe and effective use (Nasiripour, 2012).

Security concerns make it difficult for telemedicine to be widely used. These concerns include the absence of an international legal framework that allows healthcare professionals to provide services across different parts of a country, a lack of policies governing patient privacy and confidentiality in relation to data transfer, storage, and sharing between health professionals and jurisdictions, the authentication of healthcare professionals, especially in email applications, and the potential medical liability for health professionals offering telemedicine services (Salehahmadi & Hajjaliasghari, 2013).

Although there are not many regulations directly concerning virtual health, laws still govern this matter. For instance, addressing the virtual health in annual budget virtual since 2016. Also, an online information

database has been established that enforces using electronic tools instead of paper booklets and this law has been regulated since 2007. Other examples are development plan laws, such as the obligation to establish the electronic health record in the sixth development plan (Bakhtiari Aliabad et al., 2023). In the context of Iran's mental health law, there has been a comprehensive effort to safeguard the rights of psychiatric patients (Esfahani et al., 2015). The law was carefully legislated with input from many groups. It covers a wide range of topics, including definitions, standards for compulsory hospitalization and treatment, specific treatment methods, and rules outlining the responsibilities of the judiciary and executive bodies.

The Ministry of Health and Medical Education has worked on clarifying electronic health records (EHRs) and integrating hospital information systems. This shows a commitment to advancing e-health in the country. Despite challenges, efforts are being made to address them and realize the full potential of e-health in transforming healthcare delivery systems (Sharifi et al., 2013).

The health system in Iran shows the need to develop information technology in the medical field. This is because diseases vary in different areas, and resources are mainly limited to large cities. Also, spreading awareness improves health and reduces diseases. Healthcare professionals need quick access to patients' health records; information and disease statistics are important for medical research. E-health has become part of the international health system, and it aims to improve treatment quality and access to affordable care.

In Iran, the security and standards pose challenges for creating integrated data sources for the health information system and developing public access to health information (Nasiripour, 2012).

Iran works on national e-health plans like TAKFAB and SEPAS and projects to improve healthcare through technology, such as hospital information systems. However, Iran faces privacy and security concerns due to offline systems and a lack of pilot projects because large healthcare organizations focus on enterprise-level implementations.

The COVID-19 pandemic increased the use of telemedicine in Iran and showed the importance of having clear legal and regulatory guidance (Hajizadeh & Monaghesh, 2021).

It is essential to recognize that integrating telemedicine into the Iranian healthcare system can significantly improve access to sexual health services and counseling. Iran's legal and regulatory framework should adapt to accommodate the growing role of telemedicine. This may involve revising existing healthcare laws to include provisions for telemedicine,

ensuring patient privacy and data protection, and establishing licensing requirements for healthcare providers engaging in virtual health services. The COVID-19 pandemic has expanded the adoption of telemedicine in Iran, highlighting the need for comprehensive legal and regulatory guidance in this area (Damari et al., 2016).

Ultimately, Iran's legal and regulatory framework for telemedicine and virtual health has evolved to meet the challenges and opportunities presented by this emerging field. The COVID-19 pandemic has underscored the importance of a comprehensive legal framework to support telemedicine's safe and effective use in Iran. As telemedicine plays a crucial role in healthcare delivery, ongoing legal developments will be essential to ensure its success.

Iranian Virtual Healthcare: Current Issues, Debates, and Challenges

Deploying e-health applications has faced challenges, including a lack of standardization, high implementation costs, legal complexities, privacy concerns, and the need for secure data exchange. Resistance from healthcare providers and patients, technical difficulties, and cultural and organizational resistance have also slowed down the progress of telemedicine. However, Iran has made notable progress by establishing agreements for standardized data formats, increasing government support, and addressing privacy and security concerns (Sharifi et al., 2013).

Moreover, the field of virtual health in Iran faces broader challenges encompassing legal, technical, and cultural considerations (Nasiripour, 2012). Laws and regulations for telemedicine need to be clearer to ensure patient safety.

Virtual data protection is an example of challenges in virtual spaces; Iranian law enforcement officers have made positive efforts to protect personal data. However, consistent regulations are lacking in the legal system, leading to inadequate protection of personal data in Iran. While traditional laws provide some privacy protection, new laws specifically addressing personal data are needed. Initially, Iran had scattered laws for personal data protection and later drafted a comprehensive data protection law following the European approach (Mohiqi, 2023).

Many areas lack high-speed internet, which makes it hard to use telemedicine widely. Standard rules and systems are needed for smooth communication and data sharing across platforms. Creating secure, reliable infrastructure for telemedicine is another challenge.

From a cultural and educational perspective, promoting a culture of trust and acceptance among patients regarding telemedicine consultations is vital. Additionally, training and education programs are required to

enhance the digital skills of healthcare providers and patients. We must ensure that telemedicine does not lower the quality of patient care or damage patient-physician relationships.

Financial issues are a big challenge for telemedicine in Iran's healthcare system. Iran needs to find more stable ways to pay for its improvement and growth. It is crucial to budget resources for important matters like equipment, training, and security. As telemedicine grows in Iran, it is essential to make sure it can keep getting finances in the long term. Finding good funding sources to support ongoing developments and make sure they are safe is a big issue that is still being discussed (Nasiripour, 2012).

Iran needs to establish new rules for virtual health to make sure that it is safe and effective for patients. These rules should cover licensing, liability, and data privacy. It is important to ensure that individuals have the necessary technology and internet. This will help people in remote areas get medical care without traveling far. Limited internet and lack of technology are still big problems in these communities. Making progress on digital fairness is important for telemedicine to help isolated people with little healthcare access (Doshmangir et al., 2020).

The Supreme Council of Cyberspace has issued approvals regarding data processing, including personal data. These approvals reflect the general policy of the Islamic Republic of Iran in cyberspace. However, they are not directly enforceable, so many of them are not followed (Mohiqi, 2023).

In conclusion, telemedicine and virtual healthcare have made significant strides in Iran, yet several pressing challenges remain. The need for comprehensive regulations to ensure high-quality, safe patient care through licensing, liability, and data privacy standards cannot be overstated. To maintain quality care, it is essential to overcome technical challenges, maintain cultural trust and acceptance, and provide robust training for healthcare professionals and patients. Additionally, Iran needs maintain financial sustainability, balance investment in virtual care, and secure ongoing funding mechanisms to realize telemedicine's potential fully.

Historical Development of American Healthcare

The development of American health law shows how healthcare and public health have changed over time. At first, public health rules in the United States focused on local efforts in communities. They dealt with issues like sanitation and rules for industries that could be risky. Initially, sanitarians dealt with issues such as overcrowding, pollution, and contaminated food, which led to more regulations for businesses.

These regulations covered many areas like building safety, transportation, trades, and worker wellbeing. This showed a focused effort to protect public health during changing times. Important moments in this history include the start of the U.S. Marine Hospital Service (USMHS) in 1798, which later became the Public Health Service, and the start of federal quarantine authority in 1796. This led to the passing of the Federal Quarantine Act in 1878 (Gostin, 2008).

The development of American health law demonstrates how important policies are in shaping health outcomes. Policies are crucial for the wellbeing of people and can have big effects on public health. Collaboration among researchers, public health experts, and policymakers is essential to make sure that policies work well. Researchers find and share evidence, practitioners carry out solutions, and policymakers use this evidence to make good choices (Brownson et al., 2009).

Health law in the United States traces its roots back to early documents like Shattuck's "Report of a General Plan for the Promotion of General and Public Health", which laid the groundwork for further health legislation. Treatises and books dedicated to public health law dating back to 1892 highlight the academic and scholarly engagement with this field, contributing to the evolving understanding of public health law. As communication technology has advanced, telemedicine become more feasible and widely used. Telemedicine applications now include specialized care, patient consultations, remote patient monitoring, and medical education. Telemedicine systems were initially developed to provide access to healthcare for people in remote rural areas and have since advanced to provide medical intervention for soldiers in combat and to serve urban medical centers. They help locations with few populations and allow off-site physicians to conduct patient consultations remotely. Urban telemedicine systems, such as those at the Mercy Health System in Philadelphia, Pennsylvania, and AtlantiCare Regional Medical Center in Atlantic City, New Jersey, show the significant benefits of telemedicine in assisting patients with various medical conditions, including chronic diseases, mental health disorders, and stroke treatment (Clark et al., 2010).

NASA was the first organization in the world to provide American astronauts with remote medical consultation services from Earth. This helped eliminate distance barriers and improved access to medical services that would often not be consistently available in distant rural communities (Salehahmadi & Hajjaliasghari, 2013).

The field of telemedicine has changed a lot over the years in America, but there is still room for improvement.

Telemedicine and Healthcare Legal Framework in the United States

The evolution of virtual healthcare has brought about significant changes in the healthcare landscape of the United States. As virtual care gains importance, ensuring the safe, competent, and ethical practice of healthcare professionals delivering care through digital platforms becomes critical.

Receiving healthcare in virtual spaces is convenient, but it is important for individuals to be responsible and accountable. Even if they have not met the treating physician in person, they are still a patient. Laws in states protect patients, and two of these laws directly impact telemedicine: physician-patient privilege and licensure. Physician-patient privilege requires courts to keep the relationship confidential, but telemedicine could compromise this if third parties access confidential information, like electronic medical records (Clark, 2010).

Clear licensure requirements are important for keeping the virtual healthcare system in the United States reliable. These requirements make sure that healthcare providers have the right qualifications and follow ethical standards, which ensures that telemedicine professionals are competent and safe. Healthcare professionals who offer virtual services must meet specific standards for education and ethics. This ensures that patients can trust their practitioners' competence and ethical commitment. These standards also help assess practitioners' skills and set a level for safe and effective care in both in-person and virtual consultations. Licensure requirements ensure that virtual healthcare providers across different parts of the United States have consistent qualifications in terms of competence and ethics (Leslie et al., 2023).

Ultimately, these requirements are centered on safeguarding patient interests and instilling confidence in patients regarding their online healthcare providers' qualifications and ethical commitment (Garber & Chike-Harris, 2021).

There are many regulations concerning virtual health directly and indirectly, including State Telehealth Laws, E-prescribing standards regulations, and many more, but it must be noted that strong data protection policies, like those in HIPAA, are crucial for keeping patient information confidential and building trust in the healthcare system. It is also essential for policymakers to consider how virtual health policies can affect health equity, making sure that virtual healthcare meets the diverse needs of patients across the country. HIPAA, legislated by the U.S. Congress in 1996, includes various titles, with Titles 1 and 2 explicitly addressing privacy protection. Title 1, Health Access, Portability, and Renewability, indirectly impacts privacy by ensuring individuals can maintain their health coverage when changing jobs. Title 2, Preventing

Healthcare Fraud and Abuse (Administrative Simplification), forms the core of HIPAA's privacy protections, including standardizing electronic healthcare transactions, identifiers, privacy rules, and security measures to protect electronically protected health information (ePHI).

HIPAA's Privacy Rule encompasses policies related to information flow, patients' rights to review and amend their medical records, and administrative requirements. The Security Rule mandates that covered entities, including health plans, healthcare clearinghouses, and healthcare providers, implement safeguards to protect (ePHI) (Dwyer III et al., 2006).

Laws protect patients who receive virtual care, and licensure requirements ensure that healthcare providers have the qualifications and follow ethical standards. Virtual Health laws, including HIPAA's privacy protections, are essential for keeping patient information confidential. Policymakers need to consider how virtual health policies impact health equity, especially for marginalized communities with complex healthcare needs.

American Virtual Healthcare: Current Issues, Debates, and Challenges

In the recent American health law landscape, some important issues and debates have risen up. These include healthcare access and affordability, which are still significant challenges even with the Affordable Care Act's efforts to expand coverage.

Healthcare costs are frequently a topic of discussion, especially when it comes to the prices of medication and hospital bills. Additionally, health law intersects with various social and ethical issues, such as reproductive rights, mental health parity, and emerging technologies like artificial intelligence in healthcare. The pandemic has paced up changes in telehealth regulations and highlighted the need for flexible healthcare services. As the healthcare landscape continues to change, American health law faces ongoing challenges and debates that necessitate careful consideration and responsive legal frameworks (Garber & Chike-Harris, 2021).

One of the significant challenges in virtual healthcare is the need to modernize public health law. Many existing statutes and legal frameworks must be updated and aligned with the complexities of modern health challenges. State public health laws often date back to the late 19th and early to mid-20th centuries; updates are needed to modernize scientific knowledge and legal standards.

Moreover, complex legal layers have been collected in public health laws over time, resulting in complexity that can restrict their effectiveness. Variations in public health laws among states and territories further complicate responses to health threats, leading to inconsistencies (Gostin, 2008).

Virtual healthcare itself presents specific legal concerns. Questions have arisen concerning the reliability of information in the virtual healthcare landscape. Users must consider virtual healthcare information's accuracy, timeliness, and quality control before relying on it.

Legal categories such as negligence, product liability, and negligent misrepresentation come into play in virtual healthcare. Determining the standard of care in virtual healthcare remains a key question (Government, Politics, and Law, 2021).

Many virtual healthcare providers include disclaimers on their websites, but it still needs to be determined how much legal weight these disclaimers carry and how enforceable they are. The disclaimers come in different forms and content, warning users not to depend only on the information they are provided with. While disclaimers may be beneficial in some cases, healthcare professionals should not rely solely on them to protect themselves from liability. (Biegel, 2000).

In conclusion, the landscape of virtual health in the United States is evolving rapidly, accompanied by various legal challenges and debates. There must be efforts made to shape the future of this transformative field. The American healthcare system raises issues such as access to healthcare, affordability, and privacy. Healthcare costs, including medication prices and hospital bills, are also problematic. Updating public health laws and addressing legal concerns in virtual healthcare are significant challenges that must be considered.

Conclusion

Telemedicine and virtual health are rapidly changing how healthcare is provided in Iran and the United States. While telemedicine has the potential to improve healthcare access, it also raises questions about medical practice across different areas. In September 2021, Iran made significant progress in telemedicine and virtual healthcare to fight COVID-19. Rules were made to make it easier for remote consultations and healthcare delivery. These changes have helped and will continue to help more people get medical care without leaving their homes. It's important to recognize that including telemedicine in Iran's healthcare system can significantly improve access to health services and counseling. To achieve this, Iran's laws and regulations must be updated to include telemedicine rules and ensure patient privacy and data protection. Healthcare providers offering virtual health services should have the right licenses. These changes will make it easier for people to get the help they need (Damari et al., 2016).

The adoption of e-health applications faced challenges such as lack of standardization, high implementation costs, legal complexities, privacy

concerns, and the need for secure data exchange. Healthcare providers and patients, technical difficulties, and cultural and organizational resistance have made it difficult to integrate telemedicine. However, Iran has made progress by improving its data formats, increasing government support, and addressing privacy and security concerns. These changes will make it easier and safer for people to use and share information (Sharifi et al., 2013).

Virtual health laws and telemedicine regulations in Iran include creating policies, putting them into action, keeping track of progress, and evaluating results. The Health Transformation Plan, which started in 2014, aims to improve access to healthcare in rural and underserved areas, especially remote regions. This will be done by expanding telemedicine services, increasing insurance coverage, upgrading medical infrastructure, and reducing healthcare costs. The plan has introduced a series of legal and policy frameworks to achieve these goals, including changes in health financing, expanding insurance coverage, and improving primary care services (Doshmangir et al., 2020). As telemedicine plays a crucial role in healthcare delivery, ongoing legal developments will be essential to ensure its success.

In the United States, it is important for healthcare providers to meet specific requirements to ensure they are qualified and follow ethical standards. This is especially crucial for telemedicine professionals, as it ensures they are competent and safe when delivering healthcare services to patients. Regulatory authorities are vital in overseeing licensure maintenance and ensuring practitioners' accountability (Garber & Chike-Harris, 2021). The rules for getting a license to practice virtual healthcare in the United States are essential. They make sure that healthcare providers are qualified and follow ethical standards. This helps ensure that telemedicine professionals are competent and safe (Leslie et al., 2023).

These requirements make sure that healthcare professionals who offer virtual services have the right education and ethics. This helps patients trust that their practitioners are skilled and ethical. It also sets a standard for safe and effective care during both in-person and virtual consultations. HIPAA has played an important part in making sure that patient information stays private in the United States (Dwyer III et al., 2006).

Virtual healthcare in the United States has several important factors to consider. Healthcare professionals who provide virtual care must be competent and ethical, and their services should be safe and trustworthy. Data protection policies are crucial to ensure patient confidentiality. Policymakers need to consider how virtual health policies can affect health equity and ensure that virtual healthcare benefits all patients across the country. Both Iran and the United States understand the importance of virtual healthcare and telemedicine in making healthcare more accessible

and affordable. They have each created legal frameworks to address the challenges and opportunities presented by these practices. Iran's legal framework is changing to adapt to telemedicine's growing role, focusing on making healthcare services more accessible. In contrast, the United States emphasizes licensure requirements and data protection policies for healthcare professionals providing virtual care. This helps ensure that they are competent and ethical while addressing concerns about health equity. Both countries' legal frameworks reflect their unique healthcare landscapes. They share a commitment to providing better patient care and access to healthcare services. These legal developments highlight the ongoing evolution of virtual health and telemedicine globally.

Ethical considerations

The author has completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc.

Conflicts of interests

The author declares that there is no conflict of interests.

Data availability

The dataset generated and analyzed during the current study is available from the corresponding author on reasonable request.

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