EXPLORING THE EFFICACY OF TELEMEDICINE IN GUARANTEEING ACCESS TO HEALTH SERVICES IN RURAL AREAS IN UGANDA

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DECLARATION

I, SSEMPEERA JOSEPH, declare that the information in this Dissertation is true to the best of my knowledge and has never been presented for any academic award in any institution or university. All sources used in the research study have been accurately acknowledged.

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APPROVAL

This dissertation has been submitted to the School of Law at Uganda Christian University with the approval of the supervisor.

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ABSTRACT

This study examines the efficacy of telemedicine in guaranteeing access to health services in rural areas in Uganda. The research analyzes the non- legal and institutional framework governing telemedicine in Uganda, exploring the intersectionality of international conventions and instruments, regional, domestic legislation. The findings underscore the benefits of telemedicine, the barriers to its effective implementation and relevant bodies responsible for its implementation. The study concludes that telemedicine serves as an effective means of preventing and curbing diseases in rural areas and should urgently be incorporated in Uganda 's health sector. It advocates for increased awareness and civic education, empowering the responsible institutions, training of village health workers on the use of telemedicine to effectively solve the health needs of the remote dwellers. Telemedicine if effectively embraced, it can rapidly solve the health disparities of remote dwellers hence boosting the health sector in Uganda.

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2. World Health Organization 'Global Strategy on Digital Health 2020-2025'

ABBREVIATIONS

WHO – World Health Organization.

DPP Act – Data Protection and Privacy Act.

EAC – East African Community.

ICT – Information Communication Technology.

WMA – World Medical Association.

GDPR – General Data Protection Regulation.

EU – European Union.

EAHRC – East African Health Research Commission.

eCHIS – Electronic Community Health Information System.

DHIM – Division of Health Information Management

HIIRE TWG – Health Information Innovation and Research Technical Working Group.

ITU – International Telecommunication

CHAPTER ONE

1.0 Introduction

Telemedicine is a situation where healthcare professionals deliver medical services over a distance. It covers diagnosis, treatment, disease prevention, injury care, research and evaluation all aimed at protecting the health of people and communities.

[1] For the purposes of this dissertation, telemedicine is understood as the delivery of clinical healthcare services across geographical distance through digital and electronic communication technologies, where medical consultation, diagnosis, treatment decisions, and patient monitoring occur without physical co-presence, and within a regulatory and ethical framework designed to protect patient safety, confidentiality, and quality of care.

Building on this understanding of telemedicine, it is important to situate the concept within the broader context of global digital transformation and its impact on contemporary healthcare systems. The global digital transformation has fundamentally reshaped various sectors, with healthcare undergoing a profound evolution through the adoption of telemedicine. Telemedicine, a critical subset of e-health (telehealth), leverages information and communication technologies to deliver clinical care, consultations, and health education, thereby overcoming geographical barriers. In developed nations, telemedicine is no longer a novelty but a mainstream component of healthcare systems, effectively bridging geographical and logistical barriers to ensure access to care, enhance efficiency, and improve

[1] A guide to telemedicine in primary health care by Dr. Andrea Elena, Dr. Anca Maria, Dr. Marius Marginean, Dr. Dana Farcasanu accessed on 9th December 2025.

patient outcomes. This widespread integration demonstrates its viability as a powerful tool for health system strengthening.

However, in Africa, the promise of telemedicine remains largely unfulfilled in developing nations, particularly in Sub-Saharan Africa. Uganda epitomizes this paradox. Uganda has been slow to systematically harness telemedicine despite facing acute healthcare access disparities characterized by a severe shortage of healthcare professionals, inadequate infrastructure, and significant transportation barriers for rural populations. While initiatives like Rocket Health, Easy clinic, First Pharmacy showcase its potential, adoption is fragmented and not nationally scaled. This inertia stems from a complex web of social, economic, and legal restraints, including limited digital literacy, unreliable internet connectivity in rural areas, high costs for end-users, and the absence of a robust regulatory framework governing licensing, and reimbursement for virtual care.

These structural and contextual challenges in Uganda mirror concerns widely identified in the academic literature on telemedicine adoption in low- and middle-income countries. Various researchers have dissected this topic especially about the critical barriers such technological challenges for patients, concerns over confidentiality, low patient engagement, and a glaring lack of institutional support and infrastructure. Their findings underscore a critical disconnect between recognized potential and practical implementation.

Therefore, this dissertation seeks to move beyond merely acknowledging telemedicine's potential, its primary aim is to critically investigate its actual and perceived efficacy in bridging the healthcare access gap for Uganda’s rural populations. This study will further analyze the specific social, economic, technological, and policy-related determinants that currently constrain its

widespread adoption and effectiveness. By synthesizing global best practices with a grounded analysis of the local Ugandan context and correspondingly this study will generate evidence-based recommendations, by providing a compelling case and a clear roadmap for relevant authorities to actively legislate, invest in, and strategically incorporate telemedicine into Uganda's national health framework.

1.1 Background of the study

The development of telemedicine in Uganda is a long process rooted in the broader national e-Health evolution. In the 1980s, an audio satellite link for medical education between Uganda and Canada was created. Uganda progressively built digital health infrastructure through phases of data system computerization, pilot m-Health projects, and national policy formulation. Key milestones include the rollout of DHIS2 (2011), early innovations like WinSenga and mTrac, and the establishment of the National eHealth Policy (2013, updated 2018). The current National Health Information and Digital Health Strategic Plan (2020/21-2024/25) aims at deepening digital integration.

Despite a long trajectory of digital health initiatives, telemedicine remains fragmented and under-institutionalized outside of urban centers. This study therefore investigates why given this profound foundational history telemedicine has not yet effectively guaranteed health service access in rural Uganda, and what factors will determine its future efficacy.

1.2 Problem statement

Despite progressive policy development and pilot initiatives in Uganda's digital health landscape, a critical gap persists between the theoretical potential of telemedicine and its practical efficacy in guaranteeing equitable healthcare access for rural populations. While telemedicine promises to transcend geographical

barriers, improve care delivery, and uphold the fundamental right to health, many citizens who reside in rural areas continue to face severe health disparities. These populations deal with a severe shortage of healthcare professionals, distant medical facilities, and prohibitive socio-economic costs, leading to delayed diagnoses, unmanaged chronic conditions, and poor health outcomes.

The past COVID-19 pandemic has given emphasis to the urgent need for resilient, remote-care solutions, acting as a catalyst for telemedicine discussions. However, its integration into the national health system remains fragmented and inadequately evaluated, particularly with respect to its effectiveness in the routine management of both communicable and non-communicable diseases in resource-limited settings. Consequently, rural communities are left with inconsistent access, raising questions about accountability in fulfilling the right to health.

Given these challenges and limitations, this research centers on the insufficient evidence and limited understanding of how and to what extent telemedicine functions as a mechanism for disease management and healthcare access in rural Uganda. This study seeks to investigate this efficacy gap, moving beyond anecdotal potential to provide a rigorous analysis that can inform sustainable, equitable, and accountable integration of telemedicine into Uganda's healthcare framework.

1.3 Objectives of the study

1.3.1 General objective

To advocate for the urgent incorporation of telemedicine in the management of diseases in rural areas of Uganda.

1.3.2 Specific objectives

i. To identify the background and intersectional factors that hinder progression toward telemedicine.

ii. To recommend the adoption of telemedicine in the delivery of health services in rural areas of Uganda.

1.3.3 Research questions

i. How can telemedicine be applied in rural areas of Uganda?

ii. What are the roles of the relevant authorities in incorporating telemedicine in Uganda's health sector?

iii. What are the key barriers to telemedicine, especially in rural areas?

1.4 Significance of the study

The relevance of this study lies in its contribution to the literature concerning telemedicine in Uganda, particularly its implementation in rural health systems. By generating context-specific evidence and analysis, the research provides relevant authorities and stakeholders with a clearer understanding of telemedicine's potential, existing challenges, and practical pathways for integration into Uganda's health sector. This study aims to inform decision-makers and facilitate evidence-based policy development, thereby promoting the systematic adoption of telemedicine as an essential strategy for improving healthcare accessibility and equity in the digital age.

1.5 Justification of the study

In rural areas of Uganda, the geographical gap to a nearby clinic can be a death sentence, especially for conditions that require immediate first aid. Telemedicine would play a great role in sustaining life until patients reach the nearest health center. This study is justified by its urgent imperativeness to prevent avertable

deaths in remote areas, where poor road infrastructure and a lack of adequate health facilities creates fatal delays in diagnosis and treatment. Telemedicine has the potential to transform the way this deadly gap is bridged by connecting remote patients with medical expertise in real time. Therefore, this research is essential to move from promise to policy drawing relevant authorities such as the Ministry of Health and other decision-makers with the data-driven insights needed to utilize telemedicine as a strategic, life-saving tool in the national healthcare sector. The examination of telemedicine's efficacy is an essential step in holding the state accountable to its duty under Objective XX and Article 45[2] to provide basic medical services and achieve the highest attainable standard of health for every citizen regardless of location.

1.6 Scope of the study

1.6.1 Time

This study is being carried out in modern error where information is readily available and accessed.

1.6.2 Geographical scope

The research mainly examines remote areas in Uganda but is not confined to those areas alone.

1.7 Limitations

The literature on this topic is scarce, yet this is a key tenet of the health sector in a developing country like Uganda.

The rigidity of law and policymakers to adapt to technological advancements is the greatest limitation to this study.

[2] The 1995 Constitution of the Republic of Uganda.

1.8 Methodology

Qualitative approach

This research will adopt a qualitative methodology. The study will be primarily desk-based and will proceed in three main stages. First, it will involve the organized gathering of information from existing sources, including the review of relevant literature on telemedicine, examination of case studies, and analysis of related legal documents. Second, these sources will be critically evaluated to extract insights pertinent to the Ugandan context. Third, the findings from literature and case analyses will be synthesized to enable a nuanced exploration of telemedicine in Uganda's health sector. This structured approach ensures the comprehensive collection and analysis of information necessary to achieve the research objectives, facilitating a deeper understanding of the core issues and broadening the research perspective for both the researcher and readers. In a bid to collect sufficient information about this topic, secondary sources shall mainly be used such as professional journals, newspapers, research papers, Google scholar and different laws. Primary sources shall also be used.

1.9 Literature Review

DAN S. WAMALA, KADDU AUGUSTINE[3] in their article, they aver that Uganda's engagement with telemedicine reflects both the potential and the challenges of implementing digital health solutions in a resource-limited setting. They find that early efforts in the country were modest, beginning with low-cost static image telepathology, where digital images were captured, stored, and emailed for remote

[3] *Wamala DS, Augustine K. A meta-analysis of telemedicine success in Africa. J Pathol Inform 2013;4:6* https://www.sciencedirect.com/science/article/pii/S2153353922006277

diagnosis. This was later advanced using ISDN lines to exchange pathology and radiology images and to enable teleconferences between hospitals in Kampala. A significant milestone was the introduction of the Coolscope at Mulago Hospital[4] a motorized microscope operated remotely which revolutionized telepathology practice in Uganda and demonstrated diagnostic feasibility and accuracy comparable to conventional methods.

RIFAR LATIFI, CHARLES DOARN, RONALD MERRELL[5] In their book, they allude to the fact that telemedicine finally took center stage with the coming of Covid 19 in 2019 in Wuhan China. They also allude to the fact that telemedicine is often convenient, efficient, easy to do and generates a high level of both patient confidence and provider satisfaction. The authors also state that telemedicine was not adopted half a century ago due to several reasons such as regulatory inertia, impeded progress in the United States. The Covid 19 pandemic served as an accelerator for telemedicine following the standard Operating Procedures (SOPs) put in place by the World Health Organization such as lockdowns and curfew. These burdensome restrictions on movement led to the increased use of telemedicine worldwide. In the United States of America, the use of telemedicine soared 5000-8000% or more within months.

VICENT MICHAEL KIBERU, RICHARD SCOTT AND MAURICE MARS [6] in their article, were of the view that in developing countries like Uganda, Lacked sufficient health

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[4] https://nru.uncst.go.ug/bitstreams/ed1e5078-dc78-4c1c-91c7-b41e3d84a2d6/download *Accessed on 8 December 2025*

[5] *Latifi, Rifat, Charles R. Doarn, and Ronald C. Merrell, eds. Telemedicine, telehealth and telepresence: Principles, strategies, applications, and new directions. Springer Nature, 2020. https://books.google.com/books?hl=en&lr=&id=vTMLEAAAQBAJ&oi=fnd&pg=PR5&dq=RIFAR+LATIFI,+CHARLES+DOARN,+RONALD+MERRELL+++&ots=cJOY3KIYOv&sig=AZ-6uPSKv4KGi4E2WBvtvPoSQ_U Accessed on 8 December 2025*

[6] *Kiberu, Vincent Micheal, Richard E. Scott, and Maurice Mars. "Assessing core, e-learning, clinical and technology readiness to integrate telemedicine at public health facilities in Uganda: a health facility–based*

workers and specialists. Referrals are difficult due to the delays in lab results, testing, and travel costs that slow specialists access, frustrating both patients and providers. Telemedicine can help reduce these problems. To facilitate successful and sustainable telemedicine implementation the e-Health readiness of stakeholders should be assessed.

KIBERU, SCOTT, AND MARS[7] further observe that while Uganda's growing ICT industry has spurred rural connectivity and health innovations particularly in disease surveillance, many telemedicine initiatives remain small-scale, proof-of-concept projects lacking long-term sustainability.

KIZITO M, MUGABI EN, FORD S, HOLTZ B, HIRKO K[8] in their quantitative research identified favorable views of telehealth amongst healthcare providers and patients, though healthcare providers were more positive than patients. Among the 61 providers surveyed, nearly 79% had used telehealth, and 93.4% believed it added value to clinical practice. However, less than half felt it was more efficient than in-person visits. The key barriers reported by providers included technology challenges for patients (26%), low patient's engagement (19%), and lack of implementation support (18%). Patients, on the other hand, showed lower uptake, with only 19.8% of the 91 surveyed used telehealth at a certain time. While 89% reported that it's time savings, significant concerns were noted regarding discomfort (33.3%) and

survey." BMC health services research 19, no. 1 (2019): 266. https://link.springer.com/article/10.1186/s12913-019-4057-6 Assessed 8 December 2025

[7]Kiberu, Vincent M., Maurice Mars, and Richard E. Scott. "Barriers and opportunities to implementation of sustainable e-Health programmes in Uganda: A literature review." African Journal of Primary Health Care and Family Medicine 9.1 (2017): 1-10. https://journals.co.za/doi/abs/10.4102/phcfm.v9i1.1277 Accessed on 8 December 2025

[8] Kizito M, Mugabi EN, Ford S, Holtz B, Hirko K Characterizing Telehealth Barriers and Preferences to Promote Acceptable Implementation Strategies in Central Uganda: https://formative.jmir.org/2025/1/e60843 Accessed on 10/12/25

confidentiality (43.8%). Despite these concerns, over 72% of previous telehealth users expressed satisfaction with the services received.

Their discussion emphasizes that while telehealth is regarded as valuable and convenient for healthcare providers aligning with the Technology Acceptance Model (TAM) significant infrastructural and support-related barriers hinder its wider adoption. Providers indicated that telehealth would require major changes in clinical practice, and many felt their health centers lacked the necessary infrastructure. Patient-side barriers included limited awareness, discomfort with technology, and privacy concerns, underscoring the need for targeted patient education and enhanced digital literacy initiatives. Interestingly, unlike studies in high-income countries, this research found no significant age-related differences in telehealth perceptions, possibly due to the younger overall sample. However, patients with better self-reported health were more likely to recommend telehealth, suggesting that telehealth may not be equally suitable for all patient groups or clinical scenarios.

Their study concludes that there is strong potential for telehealth to improve healthcare delivery in Uganda and similar low-resource settings, given the high levels of interest and willingness to use it among both providers and patients. However, successful implementation will require addressing access to technology, infrastructure gaps, patient engagement, and confidentiality concerns. The authors recommend community-engaged approaches, tailored educational programs, and policy support to enhance telehealth integration. These findings offer a replicable model for informing telehealth implementation strategies in other under-resourced regions of Sub-Saharan Africa.

AKSHAY CHANDEL[9] provides a practical, on-the-ground perspective of telemedicine implementation in Uganda, highlighting both its transformative potential and persistent challenges. He provides concrete evidence that telemedicine can work in Uganda, while empirically validating the barriers duly identified in this study. The article explores how health access in Uganda has improved through teleconsultation technology, the writer centers in Uganda and its edges. Telemedicine has helped in redefining health in Uganda empowering local clinics enhancing patient reach and building resilient healthcare through digital access. He further points out that in Uganda's rural context, teleconsultation helps centralize access to health and overcome geographical isolation, which is pertinent to this research. He notes that prescriptions are also translated into the diverse local languages and are delivered via platforms such as WhatsApp, SMS or email.

Dr. Andrea Elena, Anca Maria, Marius Marginean, Dana Farcasanu in their book[10] are of the view that the surge in the development of information and communication technology have led many healthcare systems around the world to recognize the suitability of telemedicine as the solution for remote health service provision in-order to curb the increased shortages of doctors and as a means of promoting more equitable access to health. The authors continue to state that during COVID-19 pandemic revived global interest in telemedicine as a way to reduce in-person visits without limiting access to essential care. The surge in telemedicine usage during that time showed that further growth and diversification of these services is needed.

[9] *AKSHAY CHANDEL Healthcare Without Borders: How Teleconsultation Is Saving Lives in Rural Uganda May 22, 2025 https://www.easyclinic.io/improving-rural-healthcare-access-in-uganda-through-teleconsultation-technology/ accessed on 10/12/25*

[10] *A guide to telemedicine in primary healthcare accessed on* 13/12/2025.

CHAPTER TWO

2.0 Non legal aspects of telemedicine in guaranteeing access to health services in rural areas in Uganda.

2.1 Introduction.

This chapter assesses the non-legal aspects of telemedicine, focusing on technological barriers, ethical concerns, the issue of brain drain, and the acceptance and use of telemedicine. Technological barriers represent a significant impediment to the successful adoption and utilization of telemedicine. Telemedicine is solely dependent on information communication Technology (ICT) and is therefore not prone to technological hurdles. Contrary to common assumptions, certain expected obstacles such as video quality and system reliability *David L. Paul, Member, IEEE, Keri E. Pearlson, and Reuben R. McDaniel, Jr*[11] in their research identified end-user training (digital illiteracy) as a primary barrier, with many healthcare professionals lacking the necessary skills to operate complex telemedicine systems effectively. This lack of training not only prevents some providers from using the equipment but also limits others' ability to fully leverage the technology's capabilities, often leading to underutilization or abandonment of systems perceived as overly sophisticated and difficult to manage. These barriers collectively constrain access, reduce adoption, and undermine the efficacy of telemedicine, thereby reinforcing the same healthcare inequities it aims to resolve. Without coordinated intervention

[11] *Paul, David L., Keri E. Pearlson, and Reuben R. McDaniel. "Assessing technological barriers to telemedicine: technology-management implications." IEEE Transactions on engineering management 46, no. 3 (1999): 279-288.* https://ieeexplore.ieee.org/abstract/document/775280/ accessed on 10/12/25

across all four domains, telemedicine will remain an inaccessible or underutilized tool for the rural majority.

The effective development of telemedicine is contingent upon technological and infrastructural readiness but also on its adoption and acceptance by key stakeholders such as healthcare providers, patients, and health system administrators. Patient adoption is promising as mobile phone subscriptions in Uganda have grown rapidly representing a significant facilitator for telemedicine adoption, particularly in rural areas.

The widespread of mobile phones subscription presents a unique opportunity to bypass adoption barriers. Telemedicine based on Mobile applications such as WhatsApp consultations, SMS and diagnostic apps serve as a broader point for telemedicine integration which mobile-based solutions align with existing user behaviors and digital literacy levels. The proliferation of mobile phones provides a foundational layer for incremental telemedicine integration, enabling Uganda to leverage existing technology adoption to bridge healthcare access gaps.

A significant yet often overlooked barrier to healthcare access in rural Uganda is the persistent brain drain of medical professionals. Brain drain refers to the skilled workers moving from one country, economic sector, or field for another usually for better pay or living conditions.[12]This worsens existing human resource shortages, particularly in rural areas where health facilities are already understaffed and under specialized. Telemedicine can potentially address delayed diagnoses, limited specialist care, and higher morbidity rates experienced by rural populations. Rural

[12] https://www.merriam-webster.com/dictionary/brain%20drain accessed 12/12/25

regions are also disproportionately affected, as the majority of remaining clinicians are concentrated in urban centers.

CHAPTER THREE

3.0 Analysis of the International, Regional and Domestic perspectives of telemedicine.

This chapter stipulates the multi-layered governance regulatory system that shapes the adoption, regulation, and integration of telemedicine in Uganda. It critically examines the interplay between international conventions, regional agreements, and domestic laws and policies that collectively influence Uganda's approach to digital health. As an active member of key international bodies and regional blocs, Uganda is formally committed to aligning its telemedicine systems with global standards and cooperative health governance. This commitment provides a structured foundation for advancing telemedicine as a mechanism for guaranteeing access to health services, particularly in rural and underserved areas. Additionally, telemedicine is widely seen as a transformative solution across Africa[13] . Its legal regime is complex and a fragmented mix of international guidelines and varied national laws lacking a universal legal framework[14] . Despite the absence of a universal framework, the policies often focus on removing traditional barriers related to licensing, reimbursements and infrastructure to improve rural access.

3.1 International Perspective

The current international legal framework on telemedicine would best be described as a sector that is still developing and has patchy international legislation, where key soft law documents as well as ethical frameworks provided by leading global

[13] Ministry of Health (Uganda) Telemedicine Guidelines (2023).
[14] WHO '*Global Strategy on Digital Health 2020-2025'* www.who.int/publications/i/item9789240020924 *accessed 16 December 2025*

healthcare and medical associations, such as the World Health Organization, play a major role in shaping a better international legal scenario.

There is no Single International Treaty that provides for telemedicine. In the absence of a global binding convention specifically for telemedicine, the regulation of telemedicine is largely a matter of national sovereignty with countries crafting their own laws to deal with licensing issues, telemedicine standards, liability issues, and reimbursable telemedicine service issues among others within their territories.[15]

Those international positions that play a significant role are in the form of "soft law," a type of instrument used by international organizations like WHO. The World Health Organization (WHO) offers strategic directions, along with guidelines, in the form of Global Strategy on Digital Health 2020-2025, encouraging member states to implement digital health solutions in their health systems while focusing on issues like protection of information, equity, and proper governance to optimize the use of telemedicine

In this regard World Medical Association (WMA) Ethics provides guidance on the Ethics of Telemedicine and lays down the professional standards that physicians using telemedicine must adhere to during in-person consultations, in particular the informed consent, confidentiality, and professional boundaries[16]. This is the moral and professional weight that influences national medical boards.

The General Rule is that a healthcare provider must be fully licensed to practice medicine in the legal region where the patient is present during the time of the consultation. Practicing across borders without the correct licensure is often illegal

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[15] *Aris Prio Agus Santoso, Domingos Soares, Fazlin Fauzi, and Sabrina Difa Amallia. 2024. "Telemedicine: International Law Comparison". The Easta Journal Law and Human Rights Vol. 2, No. 03, June 2024, pp. 116 – 126*
https://doi.org/10.58812/eslhr.v2i03.286. Accessed on 17/12/2025

[16] *World Medical Association 'statement on the Ethics of Telemedicine'2019 www.wma.net/policies-post/wma-statement-on-the-ethics of telemedicine/ accessed 16* /12/ 2025

since telemedicine has the potential of cross border practice such stringent rules should be relaxed to promoted telemedicine on a global base.

Telemedicine cannot be meaningfully or ethically practiced in the absence of robust legal frameworks that safeguard personal health data. The protection of data privacy is now internationally recognized as a foundational prerequisite for digital health systems, with a broad global consensus affirming the need for stringent data protection standards, particularly where sensitive health information is processed. In this regard, the General Data Protection Regulation (GDPR), which came into force in 2018 as a European Union regulation, has become a pivotal reference point in global data protection discourse. Although regional in origin, the GDPR has significantly influenced international norms by setting high standards for consent, confidentiality, data security, and accountability. Its normative impact has extended well beyond the European Union, inspiring numerous countries, including those in the Global South, to enact or reform domestic data protection laws. For telemedicine systems, especially in contexts such as Uganda where healthcare delivery increasingly relies on digital platforms, these principles underscore the centrality of privacy and data protection as essential conditions for public trust, ethical medical practice, and the sustainable integration of telemedicine into national health systems.[17]

In summary, internationally the legal stand of telemedicine is still in due process with countries around the world being advised to embrace digital health and most importantly not to also neglect protection and privacy of personal data in the practice of telemedicine

[17] Tilman Harmeling *What global data privacy laws in 2025 mean for organizations Mar 25, 2025* https://usercentrics.com/guides/data-privacy/data-privacy-laws/ accessed on 17/12/2025

3.2 Regional Perspective

The East African Community has embraced Telemedicine, and the adoption is driven solely by national models. East Africa is moving collectively towards an integrated digital system

Members states are to create and come up with a common stand and similar legislation for the medical space especially telemedicine as it offers a chance for each state to share and enjoy the benefits of another members health facilities it further be integrated or explained in the aspects below

The Treaty for the Establishment of the East African Community

The Treaty for the Establishment of the East African Community [18] advocates for developing a harmonized regional health policy. The treaty encourages EAC Partner States including Uganda to work together and take joint action on priority regional health issues of mutual interest. Through encouraging the development of a Regional Health Policy (RHP). This policy framework is essential for guiding the implementation of digital health technologies across the region.

Establishment of Regional Institutions to create advisory and implementing bodies, such as the East African Health Research Commission (EAHRC), which in turn promotes and coordinates health research and information exchange, including e-health findings.

The smooth flow of Services within the Member states just like the EAC Common Market Protocol, the broader goal of the free movement of services, which includes

[18] Article 118 of Chapter 21

health services. Harmonizing regulations allows for the future recognition of professional qualifications, making regional telemedicine practice more feasible.

Member states like Rwanda and Kenya[19] have geared speedily to the adoption of Telemedicine nationally however, in contrast, telemedicine in Uganda has been primarily championed by a vanguard of private enterprises, most notably Rocket Health, which pulls steadily toward mainstream acceptance through its integrated model of virtual consultations, lab services, and drug delivery.

To sum it up, The Treaty for the Establishment of the East African Community under Article 118 is the primary legal anchor advocating for the East African Communities to pursue joint strategies, policies, and laws that facilitate the growth and regulation of telemedicine as an integrated regional health solution for all members.

[19] *Sharifah Sekalala, Shajoe J Lake, Stakeholder perceptions on institutional design of digital health regulatory frameworks: insights from Kenya, Rwanda and Uganda, Oxford Open Digital Health, Volume 3, 2025, oqaf010, https://doi.org/10.1093/oodh/oqaf010 accessed on* 17/12/25

3.3 Domestic Perspective

Currently, telemedicine in Uganda operates largely in a legal "grey area" due to the absence of a specific, comprehensive law governing the practice.[20] The legal implications are primarily dictated by existing general data and cyber laws and a new set of binding guidelines being rolled out by the Ministry of Health and is as follows

Registration and Licensing Facilities and practitioners must be registered and hold valid practicing licenses with the relevant professional bodies (e.g., the Uganda Medical and Dental Practitioners Council).

Informed Consent from Practitioners must be obtained before providing care via telemedicine and documented in the patient's medical file as this is emphasized under S.7(1)[21] which requires one to seek consent from a data subject before collecting their data.

Service providers must maintain complete and accurate medical records for telemedicine encounters, that are accessible to patients and regulatory bodies.as it is also emphasized under S.24[22] which provides for a right to access personal information.

[20] KARIM MUYOBO *Uganda moves to regulate digital health, protect patient data* https://www.monitor.co.ug/uganda/news/*national/uganda-moves-to-regulate-digital-health-protect-patient-data*-5143412 accessed 17/12/25

[21] Data Protection and Privacy Act Chapter 97

[22] Ibid

Standard of Care expected is that telemedicine services should be identical to the current, recognized benchmarks of medical care used in conventional in-person consultations.

Regulations around electronic prescriptions require careful adherence to professional standards, including a sufficient examination for diagnosis, though specific requirements vary depending on the type of medication (e.g., controlled substances may require prior in-person visits).

While a single, comprehensive law governing all aspects of telemedicine remains under discussion and development, the current framework provides a basis for legal operation, particularly for entities that integrate telemedicine into their existing, licensed physical operations and adhere to data protection and professional practice standards.

As the principal statute, the Data Protection and Privacy Act was passed to secure personal privacy and data by controlling the gathering and management of personal information. The Act classifies health information[23] as sensitive personal data, mandating stringent protections, informed patient consent for data processing, and the required registration of health institutions with the Personal Data Protection Office. In essence, the Act imposes significant accountability and transparency obligations on all parties involved in telemedicine to safeguard patient privacy and sensitive health information in the digital environment.

The DPP Act is supplemented by the specific guidelines for implementing the Uganda Electronic Community Health Information System (eCHIS). These guidelines are

[23] Section 9 of the Act

intended to standardize the implementation of the eCHIS across Uganda's health system. These guidelines align with the Health Information and Digital Health Strategic Plan 2020/2021-2024-2025, National Community Health Strategy 2020/2021-2024-2025 and Ministry of Health Strategic Plan 2020/2021-2024-2025.[24] These guidelines collectively provide the strategic direction and policy legitimacy for digital health interventions, such as telemedicine and electronic health information systems.

Patient confidentiality and privacy remain a persistent ethical concern that critically influences telemedicine adoption, even in light of recent legislative developments. A foundational study by Isabalija et al. (2011)[25], found that patients' fear of disclosing their private information to strangers was a notable barrier to telemedicine use (mean score of 3.58 on a 5-point scale). This apprehension, documented before Uganda's Data Protection and Privacy Act (2019), originated from a historically underdeveloped legal and regulatory framework for data protection, coupled with a systemic lack of institutional policies governing telemedicine usage within health facilities. While the 2019 Act provides a necessary legal foundation for digital data protection, its effective implementation and enforcement within the telemedicine ecosystem remain inconsistent and inadequately operationalized at the facility level. The absence of clear, localized guidelines and widespread awareness of these laws continues to exacerbate distrust,

[24] *Ministry of Health* https://library.health.go.ug/sites/default/files/resources/Guidelines%20for%20Implementation%20of%20CHIS.pdf *accessed on 18/12/25*

[25] *SABALIJA, Dr. Stephen R., Kituyi G. MAYOKA, Dr. Agnes S. RWASHANA, and Prof. Victor W. MBARIKA. 2011. "Factors Affecting Adoption, Implementation and Sustainability of Telemedicine Information Systems in Uganda". Journal of Health Informatics in Developing Countries 5 (2). https://www.jhidc.org/index.php/jhidc/article/view/72. Accessed on 10/12/25*

as patients and providers remain uncertain about how sensitive health data is securely stored, transmitted, and accessed. This persistent ethical-implementation gap between statutory provision and practical safeguard not only deters patient participation but also reflects a broader systemic failure to align technological deployment with enforceable privacy protections. Consequently, despite the Data Protection and Privacy Act, the credibility and acceptability of telemedicine services in Uganda remain undermined by ongoing concerns about data security and patient confidentiality.

The Ministry of Health is empowered with technical oversight from the Division of Health Information Management (DHIM), advisory input from the Health Information Innovation and Research Technical Working Group (HIIRE TWG) and coordinated implementation via the Health Data Collaborative (HDC) Subcommittee. This multi-tiered governance framework ensures alignment with national health objectives, facilitates stakeholder coordination, and supports the scalable, standardized deployment of digital health tools across community and facility levels.

Th e Computer Misuse Act, Chapter 96 reinforces security by criminalizing unauthorized access to data and cyber-attacks on digital systems. The Act can work hand in hand with the Data Protection and Privacy Act to safeguard sensitive patient health information. It criminalizes the unauthorized access[26] to or interception of programs, data, or information, which directly applies to electronic health records and virtual consultations.

The Act encourages the inclusion of Clauses such as the Confidentiality clause to guard against the unauthorized disclosure of information. Healthcare professionals

[26] Section 11

with access to electronic patient data are prohibited from disclosing it to any other person or using it for an unauthorized purpose, except as required by law or court order. Consent and Recording clause it is an offense to voice record or video record another person without authorization. This is crucial for telemedicine, where patient consent is mandatory for any form of recording of a virtual consultation.

Integrity of Data and Systems clause the law prohibits the unauthorized modification of computer material. This ensures the integrity of patient records and diagnostic data, as any modification without proper authority is an offense. System Availability clause The Act makes it an offense to interfere with or obstruct the lawful use of a computer system, which could include actions that disrupt telemedicine services or impede access to patient data.

In conclusion, therefore, Uganda has the potential to include telemedicine in its health sector, by enacting an empowering statute for the national adoption of telemedicine and this will of great importance in delivering health services to the rural areas overcoming barriers such as geographical barriers. Uganda has played a proactive role in the international telecommunications arena, for instance by repeatedly being elected to the ITU Council (2014–2018, 2018–2022 and currently candidate country for 2022–2026) and its candidacy as Future Council Member cycle 2025 [27](Government of Uganda n.d.) this shows potential to embrace telemedicine.

[27] Government of Uganda. (2025). Uganda's Candidature for ITU Council 2026–2030. Kampala: Ministry of ICT & National Guidance https://www.ucc.co.ug/ugandas-candidature-for-the-itu-council-seat-2026-2030-cycle/#:~:text=UGANDA'S%20PARTNERSHIP%20WITH%20ITU,Capacity%20Building%20and%20Knowledge%20Exchange accessed on 15/12/25

3.4 Conclusion

According to the International Telecommunication Union (ITU) [28]the United Nations agency for digital technologies, ITU estimates that approximately 6 billion people or 74 per cent of the world's population are using the Internet in 2025[29] In Uganda the ITU works closely with the Ministry of ICT

National ICT Policy and International Engagement as Gateway for Telemedicine

The development of telemedicine in Uganda is influenced by local solutions as much as the strategic positioning of the country within global digital governance processes.

[28] (2021). United States : IFC and the Telecom Infra Project Partner to Advance Digital Connectivity in Emerging Markets. MENA Report https://www.ifc.org/content/dam/ifc/doclink/2025/ifc-infrastructure-sectorsheet-tmt-jan2025-v5.pdf accessed on 16/12/25

[29] https://www.itu.int/en/ITU-D/Statistics/pages/stat/default.aspx Accessed on 15/12/25

CHAPTER FOUR

4.1 Analysis of the research questions, summary of findings, Conclusions, and Recommendations

This chapter analyses the key discoveries, inferences, and proposed actions derived from the study on the efficacy of telemedicine in guaranteeing access to health services in rural areas in Uganda, providing a comprehensive overview of the research outcomes and their implications for the country's health sector.

4.2 Analysis of the research questions.

How can telemedicine be applied in rural areas in Uganda?

Telemedicine can be realized in rural areas through teleconsultations; this involves doctors in urban centers connecting with patients in remote areas via phone calls, SMS, WhatsApp for diagnosis, prescription and follow ups. By participating in tele-consultation, patients can access timely diagnosis and treatment as soon as possible saving on travel costs.[30] This in-turn provides quick solutions to the patient's illnesses without necessarily being affected by geographical barriers.

In-addition to that telemedicine can be realized through remote training of village health workers on the use of technology to deliver health services to the remote dwellers. The result of this is circumventing the problem of an inadequate number of doctors in the health centers in the rural areas.[31]

The government of Uganda should expand the compendium of National Digital Health Guidelines of 2024 to include clear protocols for telemedicine deployment and

[30] Challenges of implementing telemedicine technology an article by Marziye Hadian, Zahra Khakdel Jelodar, Ali Sarabi

[31] Impact of telemedicine adoption on healthcare accessibility among rural populations in Uganda by Ali Fadhul.

implementation in rural settings for example SMS based consultations for band-with areas.[32]

Infrastructure development. Government initiatives or partnerships with telecom companies can help bridge connectivity gaps. This can be achieved through provision of reliable high-speed internet, affordable devices and user-friendly platforms to the remote dwellers.[33]

What are the roles of the relevant authorities in incorporating telemedicine in Uganda 's health sector?

Some of the key authorities to ensure the incorporation of telemedicine in Uganda 's health sector are Ministry of Health (MoH), Uganda Communications Commission, National Information Technology Authority, Professional bodies and academia.

The **Ministry of Health**, it is the agency responsible for developing the national eHealth Policy and Strategy which guides the use of ICT in transforming healthcare. All this is done through setting the strategic direction and priority interventions for the digitization of the health information system. Besides it's responsible for the coordination and oversight, the MoH coordinates to ensure harmonized and effective implementation of telemedicine. The **Uganda Communications Commissions** is another authority responsible for incorporation of telemedicine into the health sector, it's an independent entity mandated to license and oversee the delivery of communication services which includes the underlying infrastructure needed for telemedicine for example internet connectivity, voice, data. The government

[32] Ibid
[33] Elevancehealth.com

through this body can sensitize the people in remote areas to cause awareness concerning telemedicine through putting out adverts on radios and televisions, sending SMS**. Professional bodies and academia,** these bodies for-example Makerere University Medical School and the Uganda Medical Association help in training health care workers on the use of telemedicine platforms and integrating it into medical education and practice. The above-mentioned bodies are also vital in conducting research to provide evidence-based insights to inform policy and implementation strategies.

What are the key barriers to telemedicine, especially in rural areas?

Absence of regulatory policies.

The absence of dedicated telemedicine policies, legal frameworks, and regulatory standards in Uganda hinders implementation. It should be noted that before telemedicine can be implemented in the grassroots, there is need for formulation of a legal framework providing for it. The insufficient legislation for ethical practices creates additional obstacles for the smooth implementation of telemedicine in the rural areas[34].

Infrastructure and technological barriers.

Inadequate digital infrastructure poor internet connectivity and unstable electricity supply limit reliable telehealth delivery in rural areas. Patients lack access to necessary devices like smartphones. Health care providers also point to technological challenges, for-example limited band-with and high

[34] Characterizing telehealth barriers and preferences to promote acceptable implementation strategies in Central Uganda an article by Michael Kizito, Erina Nabunjo Mugabi, Sabrina Ford, Bree Holtz.

telecommunications costs which makes telemedicine a myth in rural areas in Uganda[35].

Limited awareness.

Many of the remote dwellers are not aware of the concept of telemedicine. This leads to its slow implementation in the rural areas since the beneficiaries are not equipped on how to operate the devices in-order to communicate with the doctors.[36]

Economic disparity. Many of the people leaving rural areas cannot afford the costs smart devices, data. Most of these remote dwellers can only afford button phones which cannot access the internet for smooth online consultations with the doctors that are mostly situated in urban areas hence slowing the implementation of telemedicine in rural areas[37].

4.2 Summary of Findings

The study explores the efficacy of telemedicine in guaranteeing access to health services in rural areas in Uganda. The research reveals that, despite a profound historical foundation, telemedicine has not yet been effectively leveraged to ensure access to health services in rural Uganda and identifies the key factors that will determine its future efficacy.

[35] Characterizing telehealth barriers and preferences to promote acceptable implementation strategies in Central Uganda an article by Michael Kizito, Erina Nabunjo Mugabi, Sabrina Ford, Bree Holtz
[36]Characterizing telehealth barriers and preferences to promote acceptable implementation strategies in Central Uganda an article by Michael Kizito, Erina Nabunjo Mugabi, Sabrina Ford, Bree Holtz
[37] Ibid

Key findings highlight the long but fragmented history of telemedicine, barriers to the adoption of telemedicine, ethical concerns and the importance of exploiting the digital era in Uganda's health sector as well as guaranteeing the right to health.

Additionally, the study underscores the advantages of telemedicine, such as navigating geographical barriers and guaranteeing timely access to medical attention especially in rural areas. It indicates a significant potential for using telemedicine, thanks to streamlined digital era, Uganda's strong and able law on data privacy (Data Protection and Privacy Act) which guarantees right to privacy and the growing rates of mobile phone subscriptions lowering digital illiteracy essential for the adoption and acceptance of telemedicine.

The study examines Uganda's potential to adopt telemedicine at a national level. Telemedicine is transformative and possibly the future of the medical world in terms of offering people treatment however, there's a lot that still must be done in terms of legislation and functionality of the system, who can work where and on what grounds additionally determining how the services operate and entail.

Additionally, Uganda has tasted the possibility of telemedicine through private entities like First Pharmacy which provides medicine to patients through online ordering and the medicine is delivered to the doorstep of that patient, Rocket health that have operationalized this topic of discussion by providing e-health services like e-consultations.

4.3 Conclusion

The study concludes that telemedicine is a pertinent aspect in guaranteeing access to health of the general population of Uganda irrespective of the geographical barriers which make it difficult for in-person care services (face-to-face visits). It is

undisputed that physical examination is inevitable and cannot replace all aspects of medical care, however, where needed particularly in primary care, chronic disease and consultation telemedicine can be effective and efficient.

Uganda's subscription to the Treaty of East African Community plays a crucial role in promoting telemedicine as the treaty encourages member states like Uganda to adopt and embrace developments in the health sector such as this. Ultimately, Uganda stands a higher chance of delivering quality health services nationwide through the incorporation of telemedicine considering the strong frame work protecting personal data and the digital era.

The adoption of Telemedicine in Uganda will be a fulfillment of Objective XIV[38] (b) General social and economic objectives of National objectives and directive principles of State policy on access to health and Objective XX that makes it a mandate for Uganda to provide medical services to its citizens.

4.4 Recommendations

Based on the findings and conclusions, this study firmly recommends the following actions:

Globally strengthening the international legal basis for telemedicine can help expand access to vital healthcare services and improve global health outcomes.

Enhanced Awareness and Education on the use of Telemedicine. It is essential to significantly increase awareness of telemedicine, especially in rural areas, this can be achieved by advertising in local dialects on widespread media platforms.

[38] The 1995 Constitution of the Republic of Uganda.

Training more healthcare professionals, technical staff and care givers on how to use the relevant available technology. For-example medical practitioners may be oblivious to the fact that they can deliver health services online, therefore the state should incorporate telemedicine into medical school curricula.

Institutional Strengthening: Given the study's findings highlighting infrastructural fragmentation and unequal access as key barriers to telemedicine adoption in rural Uganda, it is essential to finalize the Digital Health strategic plan and national telemedicine policy and to invest in rural connectivity to address the digital divide. These measures directly respond to the identified gaps and will support the systematic integration and sustainable growth of telemedicine within Uganda's health sector.

By decisively implementing these recommendations, Uganda will effectively harness the digital era to transform its health sector, thereby guaranteeing all its citizens the right to access health care.

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