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Perspective

Universal Health Coverage in Africa: Maximizing the potentials of Telehealth

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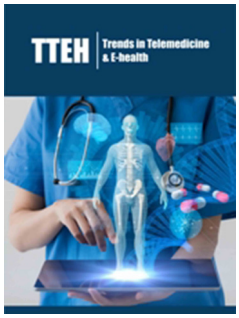

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Abstract

Background: Universal Health Coverage (UHC) is central to achieving the Sustainable Development Goals (SDGs), with telehealth offering transformative pathways to bridging gaps in equitable access for all, by leveraging technology to deliver health services remotely. In Africa, persistent barriers such as workforce shortages, geographical isolation, and weak health infrastructure continue to hinder health coverage for all.

Objective: This article explores the role of telehealth in advancing UHC in Africa, highlights the continent's unique challenges, and proposes a multi-dimensional framework to maximize its potential.

Discussion: Telehealth improves access to healthcare by overcoming distance, reducing costs, extending specialist consultations, and enhancing continuity of care. Despite its promise, widespread implementation in Africa faces technological, organizational, financial, legal, and cultural barriers. Millions lack reliable electricity, internet connectivity, and access to digital devices, particularly in rural areas where telehealth is most needed. Effective telehealth deployment therefore requires strategic investment in infrastructure, stable power supply, digital literacy, and trained personnel. Equally important are enabling policies, harmonized regulations, and ethical frameworks that are culturally competent, ensure patient safety and provider accountability. Collaborative partnerships among governments, private entities, and non-governmental organizations are vital, while Community-Based Health Insurance (CBHI) schemes can provide financial protection for rural populations.

Conclusion: Telehealth is not a panacea, but a powerful enabler of UHC in Africa. By addressing infrastructural, regulatory, and financial barriers through coordinated, multisectoral efforts, African nations can harness telehealth to expand equitable access, strengthen resilience, and advance progress toward universal health coverage.

Keywords: Telehealth; Health coverage; Quality; Population; mHealth

Introduction

Central to achieving the Sustainable Development Goals, is Universal Health Coverage (UHC). Ensuring that all people, everywhere, can access the full spectrum of quality health services when and where they need them, without financial hardship is the core that defines UHC [1]. In Africa, accessibility and coverage of essential health services are low [2]. Health systems remain strained by persistent challenges of limited workforce capacity, uneven distribution of health facilities, weak financing, and infrastructural gaps that disproportionately affect rural and marginalized populations. Against this backdrop, telehealth, backed by a strengthened health system offers a promising pathway to accelerate progress toward UHC [3]. Defined as the delivery of health services and information through digital and communication technologies, Telehealth has shown promise in addressing critical health-care challenges. It refers to the use of digital technologies such as mobile

phones, internet platforms, video conferencing, SMS and wearable devices, to deliver health services remotely [4,5]. It encompasses telemedicine and mHealth with health apps use, SMS reminders, etc.

Telemedicine has emerged as a transformative force in global healthcare delivery, with its capacity to provide healthcare services remotely, offering a direct response to the challenges of health service delivery in low- and middle-income countries, where shortages of well-equipped hospitals, infrastructure, skilled health workers, and effective governance often undermine efficiency in rural and semi-urban areas [6,7]. Improved access to care has potential to bridge geographical gaps, particularly for the vulnerable populations in rural and difficult to reach areas, overcome barriers of distance and shortage of skilled health workers, extend specialist medical consultations and diagnostic services to underserved areas, reduce patient costs, and enhance continuity of care [5]. Telemedicine is a viable approach to strengthening rural healthcare by improving quality of care, expanding access to scarce specialists, addressing workforce shortages, while supporting rural physicians, enhancing medical education, and facilitating research [8]. The COVID-19 pandemic underscored telehealth's ability to sustain service delivery during crises, accelerating the adoption of digital health interventions by enabling virtual consultations to alleviate the strain on health care systems and offering lessons for long-term integration into health systems [9].

Telehealth and the Peculiar Challenges in Africa

Telehealth has witnessed significant growth worldwide, however, the success of telemedicine in Africa hinges on navigating and surmounting the myriad challenges inherent to the continent's diverse health-care ecosystems [10]. Realizing the potentials of Telehealth requires confronting formidable challenges. The main obstacles to the successful development of telemedicine in SSA were found to be technological, organizational, legal and regulatory, individual, financial, and cultural in nature [11]. Millions of Africans still lack information and communication infrastructure, reliable electricity, internet connectivity, or access to mobile devices. Currently, only 38% of the African population uses the internet, and approximately 22% of homes have internet access [12]. Telemedicine requires infrastructure, a relatively stable supply of electricity and people to maintain and support the infrastructure. In rural areas, where telemedicine is needed the most by the poorest of the poor, it is least likely to be provided because of inadequate infrastructure and high connectivity costs [8].

Whilst many African countries have developed and adopted telehealth strategies, implementation of many of such strategies remain slow due to lack of requisite governance framework, institutional capacity, funding and sustainability crisis, as most of the pilot projects have not translated into widespread scalable and rational application into health program [4]. Although significant financial outlay may be required, Sanongo et al. [2] found non-financial barriers such as shortages in human resources and medical supplies, socio-cultural barriers, physical inaccessibility, lack of education and information, decision-making power, and gender-based autonomy, prenatal visits, previous experiences, and fear of cesarean delivery were still found to deter access to, and use of, health services and thus hinder the greater effectiveness of the UHC [2]. The uncoordinated telehealth pilot initiatives [13], lack of sufficiently trained health workforce on digital technologies [14] and inadequate legal framework and capacity for addressing ethical issues such as digital health data ownership, consent to use, availability and security are other critical hurdles to the successful implementation of telehealth in Africa [15]. The absence of clear policies and mechanisms for insurance coverage and reimbursement for telemedicine services can be a barrier for health-care providers. Cultural perceptions and resistance to change, both among health-care professionals and patients, may stem from traditional health-care practices and a lack of familiarity with telemedicine. This slows adoption of telehealth in rural areas [5].

In Africa, most Universal Health Coverage (UHC) reforms across countries have achieved coverage levels ranging between 60-90% [16]. However, progress across the key UHC dimensions such as population, service, and financial protection remains uneven and slow [17]. Telehealth offers a promising pathway to accelerate progress toward broader coverage. A study on the medical and economic benefits of telehealth in four district hospitals in Mali found telehealth activities contributed to improving medical diagnoses in cardiology and obstetrics (92.6%) and the patients' management system on site (96.2%). They also found attendance records at health centers increased from 8 to 35% at all project sites during the study period [18]. In Rwanda, Babyl Health connects thousands of patients daily to clinicians via mobile phones and in Kenya, mHealth platforms facilitate maternal and child health follow-ups [19,20]. Several other African countries, including Malawi, Cape Verde, Ghana, and Kenya, have developed and adopted national telehealth strategies; however, ensuring their sustainability remains a critical challenge [21,22]. Health for all continues to be a priority for African countries. The African Union adopted the Africa Health Strategy (2016-2030), which mandates all African governments to guarantee healthcare for all its citizens in an equitable manner by 2030 [23]. Telehealth is well positioned to play a pivotal role in these public health initiatives [24,25]. It fosters international collaboration among health-care professionals, as experts from different parts of the world can collaborate on complex cases, share knowledge, and contribute to a global pool of medical expertise, which are applicable to patient care, even in the most remote setting [26].

Framework for Maximizing Telehealth for UHC

To maximize telehealth's potential for UHC, a multi-pronged framework is essential. Most of the challenges revolve around technology, hardware costs, financial mechanisms, adoption, regulatory environment, and management strategy [27]. Telehealth health can change the playbook, but strategies are needed [28]. Policy and governance must prioritize surmounting these challenges by enacting enabling legislation and harmonizing regulations across regions. Legal, regulatory and ethical concerns are critical in

patient care over distances and raises issues of liability, licensure, jurisdiction, quality, continuity of care, confidentiality, data security, consent, authentication and remuneration [8]. Quality of care can be addressed by the development of discipline specific guidelines for the practice and local medical content [29].

Investments in infrastructure, broadband, mobile connectivity, and stable electricity are indispensable to the advancement and transformative impact telehealth can have on healthcare access in Sub-Saharan Africa [30]. Significant infrastructure that is capital intensive is vital to laying a strong foundation for the expansion and progress of technological capabilities in Africa for current and future demands [31-33]. Arguably, the use of assets like approach such as USSD (Unstructured Supplementary Service Data), which is the most common means in rural settings will serve as springboard for easy tele-health care adoption in low resourced settings as proven Using USSD-based Mobile Payment in Context of Low Internet Connection [34]. Much of the challenge for rural broadband infrastructure is related to a low return on investment due to high capital costs and low population densities [27].

To achieve Africa's ambitious goal of universal health coverage, innovative approaches such as digital health must be prioritized with investments [4]. Financing models that leverage public-private partnerships and integrate telehealth into insurance schemes can enhance sustainability. Adequate provision healthcare financing systems that ensure access to adequate care regardless of ability to pay were identified as significant needs in the study by Sanogo et al. [31]. Appropriate health financing strategies that safeguard financial risk protection underpin sustainable health services and the attainment of UHC [32]. Partnerships between governments, nongovernmental organizations, and private enterprises is crucial role advancing telemedicine [5].

However, there is need to understand healthcare ecosystem and context, including stakeholders and role of public and private sector actors and supports based on need assessment [28]. With increasing support from the finance industry like private equity and venture capital firms, the growth of telehealth is likely to continue [33]. Capacity-building is essential for development in all aspects of tele-health in sub-Saharan Africa. Efforts at equipping healthcare should focus on competencies and infrastructure management. Finally, health insurance access is key, even in the community. Community-Based Health Insurance (CBHI) should be activated where necessary to provide some financial protection to the rural populations to ensure all barriers to UHC via telehealth are eliminated.

Conclusion

Telehealth is not a panacea, but it is a powerful enabler of UHC in Africa. By strategically addressing challenges and leveraging technological opportunities, African nations can harness telehealth to close equity gaps, expand access, and build resilient health systems. Achieving UHC by 2030 requires bold action, and telehealth, if maximized, can help turn that aspiration into reality.

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