Historical Development of the Clinical Officers Profession and Their Contribution in Strengthening the Kenyan Healthcare System

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ABSTRACT

Background: Clinical Officers have been an established professional within the Kenyan healthcare system since the colonial period, emerging in response to shortage of doctors needed to provide healthcare service for Kenyans during the British colonial period. Over the decades, this professional has undergone substantial changes in their roles, training, regulation and scope of practice, making them an integral part of the Kenyan health workforce. Despite the longstanding contributions, very few studies have been carried out to understand the career trajectory of this profession and how it has contributed in strengthening the Kenyan healthcare system.

Objectives: To determine how clinical officers have evolved within Kenya's healthcare system, identify the factors which have influenced this evolution, and the contributions in strengthening the Kenyan healthcare system.

Methods: This is a narrative review of the historical context, development of the clinical officer role, present status and future potential of clinical officers in the Kenyan health system. PubMed, Google Scholar, African Journals Online and other relevant government and institutional repositories were used to carry out a comprehensive narrative review. Literature was analyzed using thematic synthesis. Several themes emerged in areas of history of the profession clinical officers, their education and professional development, their mode of service delivery, governance and emerging health sector demands.

Key findings: Development of the clinical officer profession was occasioned by unequal access to health care and inadequate numbers of physicians. This profession evolved as a result of the process of professional regulation, development of law, educational growth, specialist training and decentralization of health service. Clinical officers are currently working from primary to national healthcare level. However, workforce maldistribution, restrictions on employment and inconsistent training opportunities have been affecting their effectiveness. Development of clear scope of practice, pathway to specialization and harmonization of training needs is crucial for them to make meaningful contributions.

Conclusion: The evolution of the clinical profession is an indication of Kenya's overall health-system transformation. The sustainability of their contribution will depend more on coordinated policies which would integrate the education, employment, regulation, deployment, professional development, and emerging healthcare needs, rather than just expanding their numbers within the Kenyan healthcare system.

Keywords: Clinical officers; Coverage; Health systems; Health workforce; Kenya; Primary healthcare; Professional development; Universal Health care; Workforce planning.

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INTRODUCTION

Health workforce is a core element of resilient and effective health care system (Burau et al., 2022). Availability, distribution, and productivity of health workers are important determinants of access to health care services; quality of health services, continuity of health services and population health outcomes (Liu & Eggleston, 2022). While this is the case, Kenya still has some problems with its health workforce, such as a lack of well-trained health workers, unequal distribution of health workers between urban and rural areas, and a growing population and epidemiological transition that has been increasing demand for health services (Ahmed et al., 2024). These labour limitations are particularly relevant in Kenya's context as it moves towards implementing Universal Health Coverage (UHC) in a devolved health system, requiring ongoing investments in the human resources for health (HRH) (Ahmed et al., 2024). The scenarios of the coming decade are expected to create significant workforce shortages (Asamani et al., 2025), while strategic workforce planning and investments will be important to achieve the goals of UHC (Ouma et al., 2025), illustrating the evolution of Kenya's health workforce policies over time, based on the country's changing demographic, epidemiological and governance context. The clinical officers (COs) are one of the most important and readily available cadres of health care workers in Kenya (Ahmed et al., 2024).

The clinical officer profession traces its roots to the 1920s, when the British colony trained locals to provide healthcare services in remote, inaccessible and rural settings where medical doctors were not available (Akinyi & Choge, 2021; Kirinyaga University, n.d). The COs have since evolved their roles and responsibilities, now operating at the epicentre of the Kenyan health care system, delivering primary, emergency, maternal and child health care, handling infectious diseases and more recently specialized clinical services. This not only extends to their direct patient care but also includes clinical leadership, supervision, training, project management, and support for health services delivery at different levels of the health system (Ajayi et al., 2025). The role of the clinical officer is one of the most important roles in healthcare delivery to Kenyans, and from the literature search, it can be concluded that the profession plays a vital role in availing essential healthcare services in rem (Mbindyo et al., 2013).

There is a close linkage between the changes in the health system and the changes in the roles and responsibilities of clinical officers in Kenya. Health policies being developed have increasingly aimed at strengthening the health workforce in terms of size, distribution and management to respond to the changing demands of the health system, as seen in the expansion of primary healthcare, the changing disease patterns, decentralization (devolution) of services and recent reforms in UHC (Okech & Lelegwe, 2015; Ouma et al., 2025). Similarly, the clinical officer professional has evolved over time to meet the evolving the Kenya healthcare system (Oginga et al, 2024). With improving healthcare system, there is a need to coordinate health workforce in order to improve health system efficiency (Nyawira et al., 2023).

Despite the important roles played by COs in the Kenyan health sector, there is a noticeable lack of literature on some specific aspects of their career– for instance, technical skills, patient services, training, regulation or professional identity. Mbindyo et al. (2013) carried out a ground-breaking evaluation of perception about the roles of clinical officers and highlighted the gap between the roles as described and the actual work of clinical officers. There is, however, little attention paid to the profession as an entity that has developed over time to meet the evolving health system, policy environment and the needs of health workers in Kenya.

One of the landmarks of the evolutions clinical officers was the review of the Kenyan constitution to strengthen regulation, training, registration and licensing of clinical officer, through the repealing of the Clinical Officer Act (CAP 260) and replacing it with Act. No. 20 of 2017 (Clinical Officers (Training, Registration and Licensing) Act, No. 20 of 2017 - Studocu, n.d.) Due to this, there is an urgent need for a historical and health systems analysis of CO's profession to gain insight on the current state of the profession and how it will change as a result of policy, country needs, improved training and opportunities, and planned workforce strategies.

This review delves into the evolution and contribution of clinical officers to the Kenyan health care system from its onset to date. It also examines the evolution of the profession, some of the key health system and

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policy challenges that have influenced this evolution, and an analysis of the role clinical officers have played in enhancing access to and service delivery in healthcare in Kenya. While it does not attempt to define the detailed scope of the clinical officer, the review lays the ground for understanding the evolution of the clinical officer profession in the health services sector in Kenya and offers evidence to health services planners and policy-makers when developing and designing future health services plans, policies and clinical officer professional development.

METHODS

Study Design

The narrative review method was used to examine the clinical officer profession in Kenya and how it has contributed to health systems strengthening over time. It was decided to adopt a narrative review method, which allowed historical, policy, education and health systems evidence to be gathered from a variety of sources, to provide background context on the development of the profession over time. This enabled the use of peer-reviewed literature as well as government legislation and policy that is relevant to the Kenyan health workers.

Literature Search Strategy

A narrative review was carried out in PubMed, Google Scholar and African Journals Online (AJOL) from July to August 2026. Additional literature was obtained from search facilities at Kenya Law, the World Health Organization (WHO), Clinical Officers Council and Kenya Ministry of Health. The second screening of the reference lists of relevant articles was also performed to find more eligible sources. The search keywords used were: clinical officers, non-physician clinicians, health system strengthening, primary healthcare, and health workforce in Kenya. The most commonly used search terms were “clinical officer Kenya”, “clinical officers Kenyan health system”, “non-physician clinicians Kenya”, “Kenya health workforce policy”, “Universal Health Coverage Kenya”, “Kenya healthcare system strengthening”, and “devolution and health workforce Kenya”.

Eligibility Criteria

All sources written in English and pertinent to the clinical officer background, education, regulation, contribution to the Kenyan workforce, health systems, and policy were considered. There were also documents from peer-reviewed journals, governmental documents, documents from the Clinical Officers Council, WHO documents, and official documents from the Ministry of Health among the documents found. Comparisons with the outcomes of other studies conducted in other parts of sub-Saharan Africa were made where applicable to provide a context for the outcomes.

Data Synthesis

Information obtained from the sources was summarized according to themes encompassed by the aims of the review. The evidence was compiled and narrated to give a historical background of the profession, the forces of change and how the profession has contributed to building a strong healthcare system in Kenya.

Historical Evolution of the Clinical Officer profession in Kenya.

Colonial history and the building of a locally trained clinical workforce

The History of clinical officers is inseparable from the colonial restructuring of the healthcare system in Kenya. Prior to colonialism, communities were able to receive health care from their local traditional healers who taught them about indigenous medicine and preventative health care. In Western Kenya, these systems were socially integrated and catered to the physical, psychological, spiritual and community needs (Odero et al., 2026). The colonial expansion brought this pluralistic situation to an end, as it favoured biomedicine and disregarded traditional best practices. Once medical services were established in the colonies, the primary

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concerns were the needs of the European administration, business and settlers, with varying access for African people and access limited (Bolt & Cilliers, 2025). This led to the creation of the institutional structure that could grow into a local workforce to provide health services, closer to the faraway communities. One of the most significant decisions was the creation of clinical officer cadre in 1928 (Akinyi & Choge 2021). This cadre was born when a small number of African health workers were trained as hospital assistants. (clinical officers) to provide medical care when there was a scarcity of formally-trained Kenyan doctors. This cadre has developed, not just as an innovation in education, but as a personnel solution to a structural lack of doctors in remote areas of Kenya. This history is vital because it lays ground on the current role responsibilities, training and the realities of clinical officer profession within the Kenya healthcare system.

Professional growth of the Clinical Officer Profession

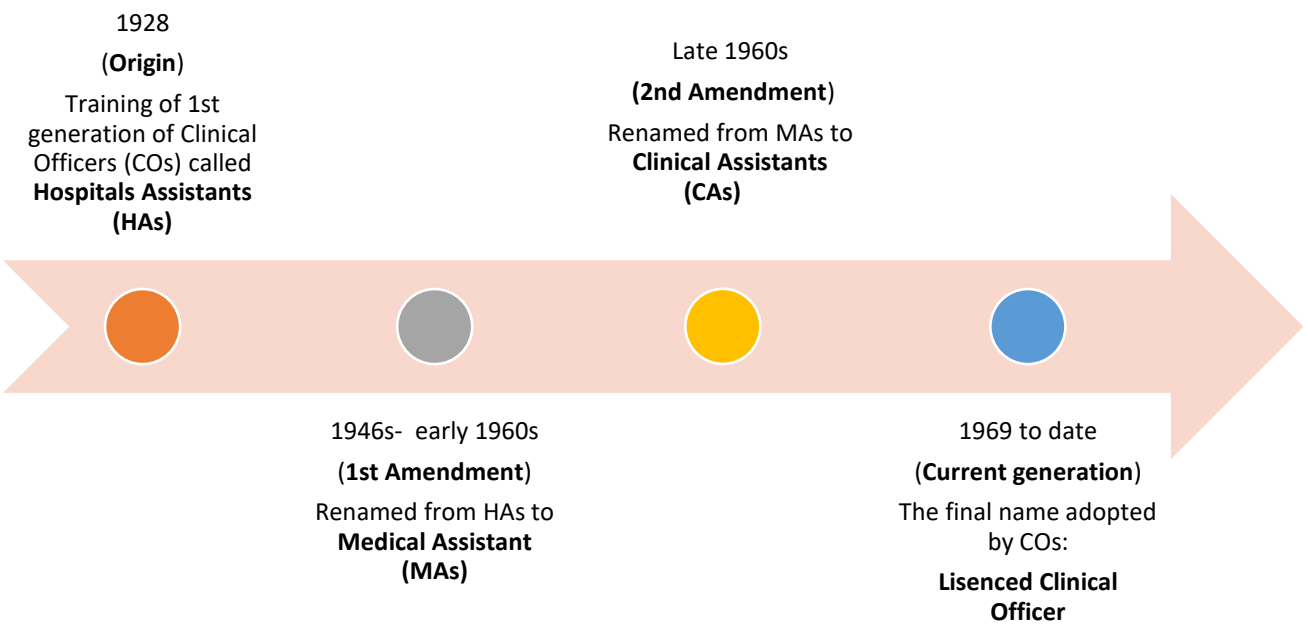


Figure 1: Generational changes in roles and name of Clinical Officers overtime. Adopted from (Akinyi & Choge, 2021)

Professional Consolidation & post-Independence expansion

Kenya attained independence in 1963, bringing in a new policy in the healthcare sector and the formation of healthcare institutions (Okech & Lelegwe, 2015). The health system left to Kenya by the colonial powers was to serve the people they colonized, but in the process of gaining independence, the priorities of the health system began to shift towards accelerating healthcare accessible to the majority of the population. In British Africa, there were significant variations in infrastructure, personnel and access to services and emerging health care needs (Bolt & Cilliers, 2025). In Kenya, which had fewer physicians, clinical officers were therefore very important in the growth of front-line healthcare workers. Due to their role, COs were given additional training and a wider scope of practice in 1969 to be able to diagnose and treat patients as registered, certified clinical officers (Akinyi & Choge, 2021) (**See Figure 1**).

The profession gradually developed from a professional acting as "shortage responders into an established health profession. According to Mbindyo et al. (2013), there are general clinical officers, specialist clinical officers, and they engage in clinical, managerial, training and supervisory activities in hospitals. This diversification represented a considerable change in institutional status from that of ‘substitutes for absent doctors' to being part of the fabric of health services. This shift was also bolstered by the provision of specialist

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training, which enabled clinical officers to acquire skills in specialties like ophthalmology, orthopedics and other specialties' (Mbindyo et al., 2013).

Key Legislation Milestones of the Clinical Officers Professional

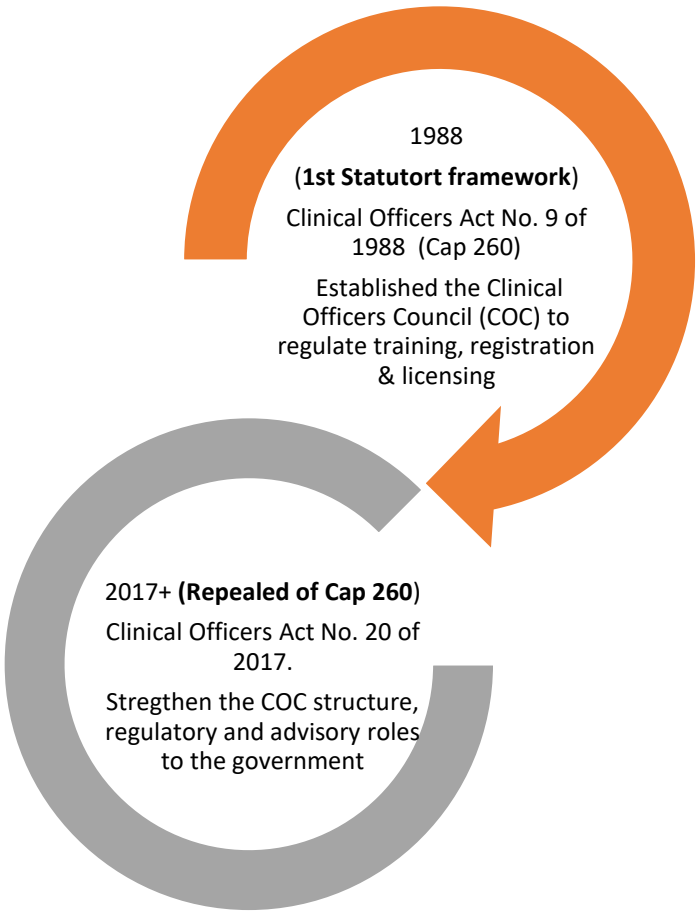


Figure 2: Changes in the legislation governing the clinical officers in Kenya.

Professionalization, Regulation and Health Workforce Expansion

More formal education in the clinical professions, as well as increasingly formal education, registration, licensing and professional governance in the clinical professions, have supported clinical officers' professional development. The Clinical Officers Training, Registration and Licensing Act (Cap. 260 and Act, No. 20 of 2017), assented to in 1990 and 2017, laid the Standards of the Educational Requirements, Registration of Practitioners, Licensing of Practice and Promotion of Professional Standards for the profession (**See Figure 2**). Growing from a group working under supervision to a profession that is legal protected in the constitution, with its own clear governing structure. There has been a significant growth in the number of clinical officer professionals over time. The health labour market analysis revealed that the number of clinical officers increased by 167% (from 8,598 to 22,930) between 2010 and 2020 – representing the highest growth rate of healthcare cadres in Kenya as analysed by (Okoroafor et al., 2022).

This growth took place due to heavy investment in health services and increased in number of higher education institutions training clinical officers. Geographical inequity, however, did not go away with growth, much like the clinical officers, other health workers were not evenly distributed in counties (Okoroafor et al., 2022). So, professional growth has not necessarily solved the unequal distribution of the health workforce and improved the health-system capacity.

Training Milestones for the Clinical Officers Profession

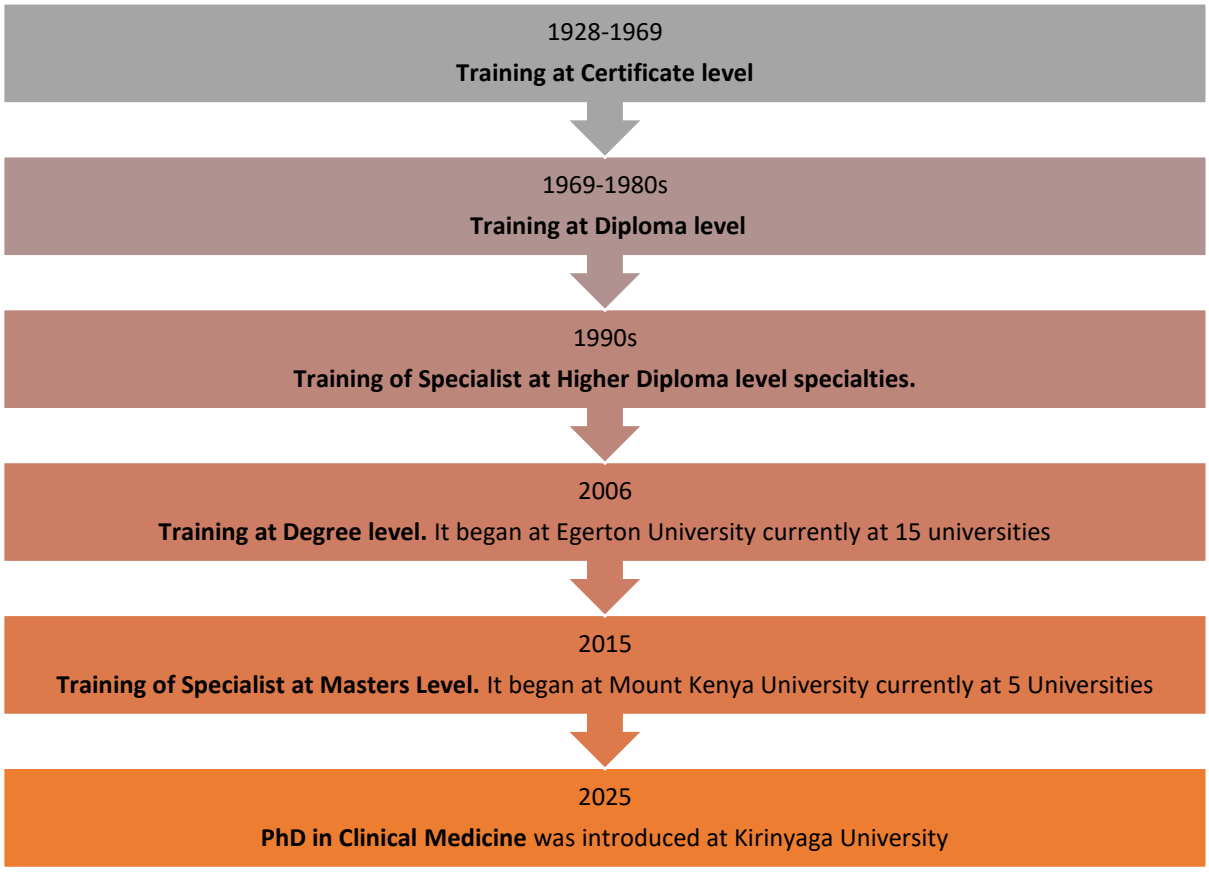


Figure 3: Evolution of training of clinical officers training in Kenya.

Educational Transformation and the Contemporary Profession

Over the years, the training of clinical officers in Kenya has undergone great changes from certificate-level training in the early 1900s to doctorate-level training today (Akinyi & Choge, 2021; Kirinyaga University, n.d) (**See Figure 3**). Diploma and Higher Diploma courses were added from the 1980s and early 1990s, while the BSc Clinical Medicine and Community Health courses were initiated in 2006 at Egerton University, and are now available in 12 Universities in Kenya (Clinical Officers Council, n.d.). Courses in the degree programmes have gradually shifted from predominantly theoretical to more practical; competency-based education to simulation; from the integration of new topics, such as telemedicine, digital health (Oginga et al, 2024). This is an indication of the transformation of health care services and the necessity for clinical officers to be not only equipped for the traditional health-care environment, but also the modern one. This is further supported by the evolution of the specialist post-graduate pathways that have come into existence and developed. For instance, the Higher Diploma in Emergency Medicine and Critical Care (EMCC), which was created specifically to respond to the lack of trained personnel to respond to medical emergencies. Graduates from this program have been employed in both the urban setting of referral hospitals and in the rural context, and are providing life changing medical emergency services (Halestrap et al., 2023).

Devolution added another dimension to evolution of the role COs in Kenya. Following the transfer of health service functions to 47 county governments in 2013, workforce management became more decentralized, creating new opportunities for local recruitment while also exposing weaknesses in coordination, planning, and distribution (Thuku et al., 2020). Recent policy analysis similarly shows that county recruitment contributed to substantial growth in the health workforce, while fragmented coordination and resource constraints continued to affect workforce planning (Ouma et al., 2025). In spite of the structural problems brought by devolution of healthcare in Kenya, is also among factors that might have contributed to evolution

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in training and scope of practice of clinical officers. With devolution, clinical officers have found themselves assigned to head health centers, join the county health management teams and run specialized clinics.

In summary, the evolution of COs has occurred due to a series of transactions and interactions between the scarcity of clinical officers, the regulation of the profession, education reform, decentralization and the changing service needs. This evolution has been a step-by-step process and not just a continuation of clinical duties. The growth of the clinical officer is significant as it demonstrates the history of the profession within the Kenyan health care system that was far more constrained in its reach, institutional acceptance, education and specialization development. The clinical officers are now responsible for delivering primary health care, running programs and creating and enacting national and county health policies.

Drivers of Evolution of Clinical Officer Profession.

Health Workforce Shortages and Maldistribution

The situation of persistent and high health worker shortages and inequities in health worker distribution have significantly influenced the development of health worker clinical officers in Kenya. Kenya has been experiencing inadequate health workforce coverage and geographical and skill-mix inequalities, as well as devolved health systems in counties. Staffing and maldistribution were also affecting service delivery and delivery efficiency within county health systems (Nyawira et al., 2022), and counties continued to have challenges in the allocation of staff following devolution (Munywoki et al., 2020). The need government to provide clinical services closer to communities led to policy shift towards the encouragement and formalization of clinical officers, particularly in areas with few specialist/physician services. In Kenya, Clinical Officers are a substantial proportion of the primary-care workforce and are over-represented in rural locations, compared to doctors (Linley, 2024). Thus, besides increasing the number of clinical officers, lack of manpower has contributed to changes in various aspects of their work, the services they render and the kind of training that is considered necessary. Task-shifting for specialized clinical officers has also been fueled by the low cost and short time for training of this cadre (Darwinkel et al., 2018). County governments have trained more clinical officers to provide critical healthcare services in remote and inaccessible parts of the country where there are low density, low resources and retention is an issue for medical consultants.

Changing Population and Disease Burden

The health workforce needs are also changing in response to the demographic and epidemiological transitions in Kenya. The health system also should be ready to address the challenges of chronic and noncommunicable disease, children's and maternal health and endemic diseases. (Smit et al., 2020), estimated that Kenyan adults living with at least one noncommunicable disease in 2018 were 51%, which is expected to increase significantly by 2035, driven by the population growth that is projected to nearly double the number of people who will need NCD services. The burden of disease is shifting, and health workers need to be able to provide support for prevention, early detection, long-term management and continuity of care and not just acute care. The implications extend beyond the education and professional development of the clinical officers, because the workforces that are being trained to handle emerging multi-faceted patterns of diseases. Recognize this, the government recently introduced and approved the Higher Diploma in Family Health for Clinical Officers (FHCO) to support the 200 family physicians managing chronic diseases and attending over 54 million Kenyans (Linley, 2024).

Focus on Primary Health care and Adoption of the Universal Health Coverage

The shift of Kenyan towards Universal Health Coverage (UHC) has led to over emphasize of the importance of Primary Health Care (PHC) that is accessible, comprehensive and located in the communities. Decentralization, prevention, health promotion, and service delivery are getting increasingly important in Kenya's primary health care reforms. (Linley, 2024) notes that the clinical officers are one of the key actors in this model, who have long been part of primary care and have a higher proportion than doctors in rural areas.

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Approval of the FHCO program is illustrative of the Kenyan health care system's development to address the emerging demand in primary care services (Linley, 2024). The FHCO programme was launched to change the role and responsibilities of clinical officers and position them as primary care clinicians who would provide comprehensive family-centered care (Linley 2014). This policy shift was as a result of realization that PHC is one of the main pillars of UHC. Karimi et al. (2025) point out the critical functions of clinical officers trained in FHCO in providing primary health care services in the country, in addition to the role of family physicians. In addition to delivering clinical services to clients, clinical officers run a significant proportion of public primary care facilities and dispensaries in Kenya (Omoto et al., 2025), although this claim could not be comprehensively verified.

Devolution and Changing Health-System Governance

Since the devolution of health service delivery to Counties in 2013, the institutional environment surrounding the management of clinical officers and other health workers has changed. There has been a shift in service provision and HRM functions from the national to the county levels: the national government formulating policies, while the county government delivering services and conducting pre-service training (Munywoki et al., 2020). Devolution of healthcare service has also allowed for greater decision-making healthcare authority by the counties, including hiring of healthcare personnel (Munywoki et al., 2020). However, it was not always the case that equivalent allocation mechanisms were used for recruitment and distribution, and higher-level hospitals were more likely to receive resources compared to primary-care hospitals in counties. Thuku et al. (2020) also identified a lack of coordination and accountability with devolved workforce management. The inadequacy of funding, staff reallocation, contractual problems and the absence of specialists could also have a negative impact on the efficiency of the health system (Nyawira et al., 2022). Political interference in the running of healthcare has been on the rise, thereby causing delays in salaries, poor remuneration and cyclic strikes by healthcare workers and clinical officers. Additionally, financial pressures on counties have been a factor in deciding to hire other cadres of workers instead of medical officers (Zhao et al., 2023). All these factors have shaped the workforce planning, deployment and retention that are the primary drivers of professional development, including the development of clinical officer profession.

Educational and Professional Transformation

Health service needs have evolved, and so has the education of the clinical officer. The profession's trajectory has been developing from certificate to degree and now doctorate training (Kirinyaga University, n.d), all this with the aim of ensuring improved competencies of COs in the modern era. The report on the curriculum development of BSc Clinical Medicine programme by Oginga et al. (2024) highlights the need to train clinical officer that are clinically competent with hands-on skills. Professional learning has also been widened with the introduction of specialist training from higher diploma to master's level (Oginga et al. 2024; Kirinyaga University, n.d). While specialist training was observed to be an essential component of the clinical officers' workforce planning in Kenya, the other non-clinical skills observed were found to be areas of deficiency, including leadership, management and communication skills (Ajayi et al., 2025). The changing clinical needs and the rise of new health professionals equipped to interact with complex health systems have resulted in an evolution of the education system as well as the growth of the clinical officer profession.

Synthesis of driver of evolution of clinical officer profession

Transformation of clinical officers in Kenya is not just due to one clinical officer's work force policy or reform. The need for the cadre existed and still does exist, though the health issues they were meant to address have changed as a result of demographic and epidemiological shifts, and policy reforms. Devolution has also impacted the recruitment, deployment and management of health workers. However, re-engineering of the concurrent education, specialist tracks and digital technologies has altered the job requirements. Paying attention to the interaction of such forces is necessary: workforce shortages may result in the demand for more clinical officers, but financial resources and governance are crucial for the efficient deployment of these officers. These interwoven drivers provide a background to analyze the role of the clinical officer in the current health system in Kenya. The evidence highlights the devolution argument—that counties were given

substantial decision-making power over HRH after 2013, which was not necessarily equitable. Nearly double the number of workers was reported by Munywoki et al. (2020), and the number of staff employed was higher at higher-level facilities; staffing difficulties continued in the study county. Likewise, (Nyawira et al., 2022) pointed out that lack of adequate staffing, staffing shortages in both location and skill-set, and skill-mix problems are all obstacles to efficient county health systems.

Current Contribution of Clinical Officers Kenya's Health Care System.

Primary Healthcare and Access to Services

The role of the clinical officer is crucial in Kenya's primary healthcare system, as their history of development has corresponded with increased access to clinical services in areas where doctors are not readily available. Clinical officers play a vital role in extending and sustaining healthcare services at lower levels of Kenyan healthcare system. According to Linley (2024), clinical officers are key players in enhancing PHC in underserved areas in Kenya, especially in remote areas. These are in line with the evidence that proper distribution of health workers, outreach, community-based services, and locally available services are essential factors that drive access (Gizaw et al., 2022). Clinical officers in Kenya can therefore be used to lessen the dependence on physician-centered approaches, and can be part of frontline care.

This contribution is highlighted by the ability of primary healthcare facilities to deal with increasingly complex conditions. In Kisumu County, Ouma et al. (2025) reported that facilities continuously conducted diabetes and hypertension screening; however, there were still significant gaps in clinical capacity, medicines, guidelines, follow-up, and provider training. Almost 80% of facilities referred patients to higher-level facilities due to insufficient clinical capacity and/or insufficient supply of essential medicines. The results suggest that the workforce isn't enough for effective primary care. They reiterate that it is important to have trained clinical cadres who can provide lower-level services, identify limitations and initiate management, and facilitate referral when clinically indicated.

Contribution to Rural and Underserved Populations

The relevance of clinical officers is also very important to the rural and underserved populations. Geographical disparities in the distribution of health workers and access to specialized services persist in Kenya. (Gizaw et al., 2022) did not review Kenyan evidence, but they synthesized international evidence and classified community programmes, outreach services, family-health approaches, telemedicine and other locally oriented strategies as being important, in regard to improving access in rural areas. The Kenyan clinical officer model is part of this larger health-system logic as the cadre emerged historically to complement the scarcity of physicians and the desire to provide clinical services. According to a study by (Omoto et al., 2025) clinical officer are estimated to serve over 75% of patients who seek medical service in hospitals on daily basis, and manage over 5,000 dispensaries and health centers. Unfortunately, this estimate figures could be authoritatively confirmed due lack of authentic studies to back up this claim. Despite this, the reality is that, COs alone cannot be the only cadre to solve geographical inequity. (Ahmed et al., 2024) showed ongoing gaps in human resources availability by region and level of care in Kenya, and that the role and impact of each cadre of health care workers is dependent on recruitment, deployment, retention, supervision, infrastructure, medicines, and functional referral systems.

Provision of Support in Emergency and Hospital-Based Care

Clinical officers also do their part in the hospital and emergency services. The emergency-care system in Kenya has grown significantly, but it has seen significant constraints such as infrastructure, training, financing and referral systems. For a country with a triple burden of communicable disease, noncommunicable disease, and trauma, the emergency sector of the health system is an area of change in the Kenyan health system, as described by Lee et al. (2022). They highlight the need for a robust approach to the strengthening of emergency care to enable the realization of Universal Health Coverage. This is related to the growth of specialist clinical officer streams. The Emergency and Critical Care Clinical Officer (ECCCO) training programme was introduced as a recognition of the critical role clinical officers play as first responders in the outpatient

department (Fant et al., 2017). Clinicians trained by ECCCO collaborate with other health care workers or independently in emergency departments and outpatient care, intensive care units (ICU) (Brotherton et al., 2019). This growth is consistent with the profession's growing integration in the context of differentiated models of service delivery.

Contribution to Communicable Disease and Non-communicable Disease Care

The shift in disease patterns has also extended the impact that is expected from clinical officers and other health frontline workers. One such example is HIV care. In Kenya, clinical officers have been reported to be a major source of HIV services, introducing and monitoring people on ARTs, managing complications of HIV, and monitoring HIV patients. While a specific contribution of clinical officers was not identified in (Njuguna et al., 2020)'s study, it illustrates the growing complexity of HIV service delivery and the need to have health workers who are able to provide clinical, communication, adherence support, coordination, and continuity of care.

The same paradigm shift is taking place in the treatment of noncommunicable diseases. Key primary-care capacity gaps identified by Ouma et al. (2025) were provider knowledge, lack of guidelines, medicines and clinical resources. A subsequent training intervention increased primary healthcare workers' knowledge of NCDs by 26%, and initially led to an improvement in clinical practices observed, but some of these gains were lost at three months (Ouma et al., 2026). The results underscore the need for ongoing professional development for the evolving disease burden. In the current context, clinical officers need to have skills more than just those of “traditional” clinical care, and skills related to prevention, early detection, treatment, follow-up and referral for chronic disease.

Contribution to Maternal and Child Health

Clinical officers also work in multidisciplinary maternal and child health services, and their services and skills are especially critical in rural and remote areas of Kenya (Linley, 2024). It was reported that in western Kenya, clinical officers cover about one-third of all antenatal and paediatric services surveyed in primary healthcare facilities (Ngere et al., 2025). Nevertheless, most maternal health care workers in Western Kenya reported high workloads, inadequate supplies, poor remuneration, challenging working environment and poor outcome for patients as major sources of occupational stress (Getahun et al., 2023). Such evidence is important because clinical contribution cannot be separated from the conditions under which services are provided.

Darwinkel et al. (2018) revealed that the clinical officers who held a higher diploma in reproductive health delivered emergency reproductive health services, mentored health workers and conducted about a quarter of surgical procedures in the facilities surveyed, such as caesarean section, repair of perineal tears, tubal ligations and uterine tear repair. Clinical officers play a vital part in health-system resilience and are likely to have an immediate impact on the continuity and accessibility of care should they not be available.

Clinical Leadership, Coordination, and Health-System Support

A growing aspect of the role of clinical officers is to coordinate and lead the healthcare services. The findings from a primary care facility for HIV in Eldoret indicated that clinical leaders were involved in strategic planning, resource management, supervision, coordination, staff training, quality assurance and conducting research (Cherop et al., 2024). While the study looked at clinical leaders (not only clinical officers), it contributes evidence to the Kenyan context that there are viable opportunities for clinical professionals to add value beyond clinical practice, in terms of linking frontline workers with clinical management and assisting in improving organizational performance. According to (Omoto et al., 2025) study that could not be authenticated, clinical officers are claimed to manage thousands of dispensaries and health centers across the country. This dimension complements the clinical contribution of the profession and an appreciation of the contribution of the clinical officers in the reinforcement of the Kenyan health system.

Overall Contribution to Health-System Strengthening

Overall, the evidence suggests that clinical officers play a role in Kenya's health system by expanding access to clinical services, supporting primary health care, in-hospital and emergency care, responding to communicable and non-communicable diseases, and providing leadership and coordination. Clinical officers play a significant role in Kenyan health care system which faces geographic inequities, shortage of staff, and an increasing demand for acute and chronic care. But, the impact of clinical officer is dependent on the broader health care system. Shortages of the medicines, equipment, training, financing, supervision, and functioning referral systems cannot be compensated by healthcare workforce numbers. This is the case of NCD screening in many facilities in Kisumu, which lacked clinical capacity or necessary medicines to manage NCD patients, thus referring them (Ouma et al., 2025). Health-worker strikes further indicate the importance of adequate staffing and organizational resilience to ensure continued services (Kaguthi et al., 2020). Clinical officers are not meant to replace other health professionals, but to complement their work, which is best done with good governance, available resources, correct training and coordinated health system planning.

Challenges faced by Clinical Officers within the Kenya Healthcare system

Despite the tremendous contribution made by Clinical Officers towards strengthening the Kenyan healthcare system, there existence has not been without challenges. Interestingly, most of these challenges stems from a myriad of systemic and policy failures. Lack of clear scope of practice, mismatch between policy and reality, inter-cadre rivalry and professionals' politics are some of the main challenges facing the COs professions. According to (Otieno Oginga et al., 2024) lack of clear of scope of practice and serve shortage is physicians has led to clinicians working beyond their training level, leading to ethical conflicts and inter-professional wrangles. Lack of clear hierarchical structure of leadership and practice, has also been attribute to inter-cadre conflict between nurses, medical officers and clinical officers (Otieno Oginga et al., 2024; Nzinga et al., 2018). Surprisingly, instance where there are clear policy guidelines for working of COs, studies have shown underutilization of COs, with only a fraction of their approved roles allocate to them (Mbindyo et al., 2013). Lack of clear regulation for training, employment and professional development has been reported as another challenge facing this profession. Clinical officers do not have a clear pathway for employment upon graduating from the specialized training, while those employed still face a lot of discrimination when it comes to promotion (Otieno Oginga et al., 2024). These challenges are living realities for most of the clinical officers, who despite not having proper recognition- often referred as substitute clinicians rather than independent healthcare professionals- (Mbindyo et al., 2013), continue offering administrative and clinical services at most of the primary health facilities in Kenya (Omoto et al., 2025).

Future Challenges and Opportunities for Clinical Officers in Kenya

Workforce Planning, Distribution and Retention

Future contribution of clinical officers will be reliant on the ability of the country to link the production of workers with the needs of the population, employment, distribution and retention. Asamani et al. (2025) predict Kenya will have a significant health workforce expansion, with a shortage of nearly 60,000 health workers in 2021, rising to more than 114,000 by 2030 and to over 476,278 by 2035. This indicates that there are not enough jobs being created to fill the current gaps. Therefore, disease burden, population growth, service delivery models, productivity, financing, and geographical distribution have to be taken into account when planning. Retention is equally important. Evidence in Kenya demonstrates that workplace and sociodemographic characteristics affect motivation, and challenging working conditions compromise workforce stability (Muthuri et al., 2020). Thus, future training and deployment plans for clinical officers should involve the provision of a suitable training programme and job opportunities, a conducive work environment, career advancement and fair employment.

Education, Specialization, and Continuing Development

The changing disease burden and growing primary healthcare agenda in Kenya demand that clinical officers keep enhancing their competencies, which match emerging services. The opportunity is to deepen educational

pathways, build education specialist capacity and build continuing education and link training capacity to real labour-market needs. Asamani et al. (2025) show that it is possible for jobs to not grow at the same rate as the workforce, and thus allow for both unemployment and underemployment. The number of graduates should not, therefore, be the aim of education policy. Rather, curricula and professional development should be designed to equip clinical officers for future multiprotection, evidence-based and technology-driven health care.

Primary Healthcare, UHC, and Task Sharing

Clinical officers have a huge opportunity in the renewed focus on Primary Healthcare and Universal Health Coverage. HRH and primary care are key to UHC, according to health-labour-market projections in Kenya (Asamani et al., 2025). Task sharing is another strategy for filling gaps in the workforce. In Kenya, the country has developed a national task-sharing policy that will enhance access to essential services, but the policy was not implemented after a judicial challenge (Kinuthia et al., 2022). The experience shows that there is a need for coordination between policy, regulation, professional bodies, education and service delivery for workforce innovation to happen in the future, and that there needs to be an independent discussion on the role of clinical officers.

Digital Health and Technological Change

Digital health offers opportunities to enhance information management, continuity, coordination, and clinical decision-making. In Kenya, however, evidence indicates that technologies must be appropriate for the actual clinical workflow in order to be successful in implementation. High acceptability of electronic immunization registry of health workers was revealed by (Dolan et al., 2023), with concerns regarding training, network reliability, system performance, staffing and changes to the workflow. For clinical officers, the shift towards digital transformation will thus take more than just technology to come about. Frontline care will require digital competence and human-centered implementation to ensure technology does not place an undue load on frontline care.

Policy Adaptation and Emerging Health-System Needs.

Lastly, the profession will have to adjust to a health system that is increasingly being defined by technological, demographic, epidemiological and environmental pressures. Kinuthia et al. (2022) note a need for policy, regulation, curricula and monitoring alignment in order to support workforce innovations. In the interim, Kenyan stakeholders note that the following are critical to creating a resilient and sustainable health system, namely: leadership, financing, infrastructure, behavioural change, and coordination (Blom et al., 2025). This means that the role of clinical officers of the future will not only be driven by their numbers but also by coordinated investments in their education, employment, regulation, technology, leadership and workforce planning. They should evolve in ways that are responsive to Kenya's health needs while maintaining their integration into a multidisciplinary health workforce.

LIMITATION OF THE STUDY

This narrative review wishes to acknowledge the following limitations of this review. The deep search approach used to select articles to answer our study objectives, might have resulted in publication selection bias. The bias selection of papers might have resulted in potential gaps in the literature presented as findings. In addition, the heavy reliance on the grey literature and secondary data, rather than primary data, resulted in presentation of some facts that could not be fully authenticated.

CONCLUSION

The health system in Kenya has continuously undergone adaptations to changing needs, which have influenced the profession of clinical officers. These were closely linked to the lack of properly educated doctors and the desire to provide medical care to underserved communities. The cadre gradually evolved and matured, through

regulation of the profession, professional training, specialists training, devolution and evolving healthcare delivery systems after independence. The history of the work has been one of continual innovation and change, and the profession has always been shaped by the needs of Kenyan workers and the health system.

In Kenya, clinical officers are a significant part of the country's health workforce today, which is multidisciplinary. They contribute to primary health care, the care of people living in rural and underserved communities, hospital and emergency care, care for communicable and noncommunicable diseases and clinical leadership. But the evidence also indicates that this is only effective if there is a supportive health-system climate. Even well-trained professionals can be constrained from contributing due to workforce shortages, maldistribution, limited resources, poor referral systems, limited training opportunities and organization constraints.

Therefore, it is crucial to pursue a coordinated approach to professional development in the future, rather than focusing only on the number of increases. Education and employment, geographical distribution, retention, and population needs should all be aligned in workforce planning. Future investment in specialist and continuing professional development will be needed as the disease burden in Kenya evolves and as services are delivered. There are also opportunities in digital health, but supportive infrastructure and training are required to put that into practice. Likewise, greater interprofessional working, leadership and consistent regulatory and policy requirements will be crucial.

In general, clinical officers' development mirrors Kenya's health system development. As long as the profession is able to change and, at the same time, be part of a coordinated multidisciplinary team. Thus, future reforms must take care to enhance the potential of clinical officers to make a meaningful contribution to accessible, equitable, responsive and sustainable health services. This direction will have significant implications for the journey Kenya is taking to become a universal health coverage nation.

Author Contributions

GG and CSO conceptualize, designing and wrote the first draft. JC supervised and reviewing the manuscript. All authors read and approved the final copy of this manuscript.

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