NEWPORT INTERNATIONAL JOURNAL OF SCIENTIFIC AND EXPERIMENTAL SCIENCES (NIJSES)

Volume 7 Issue 1 Page 25-30, 2026

ONLINE ISSN:2992-5819 PRINT ISSN:2992-6149

Open Access

https://doi.org/10.59298/NIJSES/2026/71.2530

Policy Development and Government Interventions in Diarrhea Control: The Future Role of Public Health Authorities in Africa

Nyiramana Mukamurera P.

Faculty of Medicine Kampala International University Uganda

ABSTRACT

Diarrheal diseases remain a leading cause of morbidity and mortality among children under five in Africa, despite the availability of cost-effective preventive and therapeutic interventions. This review examines the role of policy development and government-led interventions in diarrhea control, highlighting successes, persistent gaps, and emerging opportunities. Key strategies, including oral rehydration therapy, zinc supplementation, rotavirus vaccination, and water, sanitation, and hygiene (WASH) initiatives, have proven effective but are often undermined by inequitable access, weak health systems, and inconsistent implementation. The review emphasizes the evolving role of public health authorities in coordinating multisectoral strategies, strengthening surveillance, ensuring sustainable financing, integrating digital health innovations, and promoting equity-focused interventions. Research and monitoring priorities, including pathogen surveillance, sustainable WASH financing, and evaluation of digital IMCI and community health worker models, are essential to inform evidence-based policymaking. The study underscores that well-coordinated, adequately resourced, and context-specific government interventions are critical to reducing diarrheal morbidity and mortality and achieving child health equity in Africa.

Keywords: Diarrheal diseases; Public health policy; Government interventions; Africa; Child health.

INTRODUCTION

Diarrheal diseases remain among the most pressing public health challenges in Africa, particularly for children under the age of five. Despite significant advances in global health, diarrhea continues to be one of the leading causes of morbidity and mortality, contributing to an estimated half a million preventable child deaths worldwide each year [1]. Sub-Saharan Africa bears the heaviest burden, where structural inequalities, poverty, weak healthcare systems, and limited access to clean water and sanitation converge to exacerbate the problem. Unlike many non-communicable diseases that require long-term behavioral and systemic changes, diarrheal diseases are highly preventable and treatable with low-cost and effective interventions [2]. Oral rehydration therapy (ORT), zinc supplementation, rotavirus vaccination, and improvements in water, sanitation, and hygiene (WASH) are proven strategies that can significantly reduce mortality and morbidity rates.

The persistence of diarrhea as a major public health burden in Africa is not due to a lack of solutions but rather the insufficient scale-up and sustainability of these interventions. For example, while the introduction of rotavirus vaccines has markedly reduced hospitalizations and deaths in some African countries, coverage rates remain uneven, with disparities between urban and rural areas [3]. Similarly, although oral rehydration salts (ORS) and zinc are widely acknowledged as life-saving treatments, their availability and use remain inconsistent across health facilities.

These challenges highlight the crucial role of government policies and interventions in ensuring equitable distribution and adoption of life-saving measures [4].

Policy development in health is often shaped by national priorities, economic constraints, and global commitments. The African continent, through its participation in global health frameworks such as the Sustainable Development Goals (SDGs), has committed to reducing preventable child deaths and strengthening health systems [5]. The SDG target 3.2 specifically emphasizes ending preventable deaths of newborns and children under five by 2030. Achieving this goal requires decisive action against diarrheal diseases, among other preventable conditions. National governments and public health authorities therefore have an urgent mandate to craft policies that not only address the biomedical dimensions of diarrhea but also tackle the broader social and environmental determinants [6].

Diarrheal control cannot be viewed solely as a medical intervention; it demands a multi-sectoral approach involving water and sanitation ministries, education sectors, community-based organizations, and international partners. This interlinkage underscores the importance of public health authorities not just as implementers of clinical solutions but also as coordinators of cross-sectoral strategies [7]. Government-led policies must therefore integrate preventive, promotive, and curative measures into national health plans while ensuring sustainability through financing mechanisms, community engagement, and capacity building of health systems.

Despite decades of concerted international and national efforts, diarrhea continues to be a leading cause of preventable child mortality across Africa, particularly affecting children under five years of age. Epidemiological data indicate that children in low-income African countries are up to ten times more likely to die from diarrhea than their counterparts in high-income countries, highlighting a stark disparity in health outcomes [8]. Alarmingly, many of these deaths occur in settings where effective interventions, such as oral rehydration solutions (ORS), zinc supplementation, and vaccines, are theoretically available but are inconsistently utilized due to systemic gaps. Several interrelated factors contribute to this persistent public health challenge. First, diarrhea prevention and control have often received limited policy prioritization compared to other infectious diseases like malaria, HIV/AIDS, and tuberculosis, resulting in slower programmatic progress [9]. Second, inadequate health system infrastructure, including weak supply chains, under-resourced facilities, and insufficiently trained personnel, impedes the reliable delivery of essential interventions. Third, inequitable access to water, sanitation, and hygiene (WASH) services exposes millions of households to diarrheal pathogens. Additional challenges include weak surveillance systems, which limit timely evidence-based decision-making, and financial dependence on donor funding, raising concerns about sustainability. Without stronger, coordinated, and sustainable government interventions, diarrhea will remain a significant barrier to child survival, health equity, and achievement of global health targets in Africa [10]. This study aims to provide a comprehensive examination of government policies and interventions for diarrhea control across African countries, with a focus on identifying strengths, gaps, and opportunities for improvement. Specifically, it seeks to evaluate the current policy landscape, analyze the effectiveness of proven interventions such as oral rehydration solutions (ORS) and zinc supplementation, rotavirus vaccination, water, sanitation, and hygiene (WASH) initiatives, and case management, and assess the challenges that hinder successful policy implementation and sustainability. Additionally, the study investigates the role of public health authorities in coordinating multi-sectoral strategies, emphasizing leadership, governance, and accountability as key determinants of effective diarrhea prevention and control. Guided by research questions addressing policy effectiveness, implementation barriers, and cross-sectoral collaboration, the study intends to generate evidence-based strategies and recommendations to enhance government action. The significance of this research lies in its potential to inform policy formulation, strengthen public health leadership, support Africa's progress toward the Sustainable Development Goals, and promote equity in access to life-saving interventions, particularly for marginalized and rural populations. Ultimately, the study underscores that while diarrheal diseases remain a major public health challenge, proactive, coordinated, and well-resourced government-led strategies can dramatically reduce morbidity and mortality, ensuring healthier futures for Africa's children.

The contemporary policy landscape

The contemporary policy landscape for childhood diarrhea in Africa encompasses a combination of established clinical frameworks, preventive strategies, and emergency preparedness measures. At the clinical level, the Integrated Management of Childhood Illness (IMCI) provides a long-standing policy framework guiding the assessment and first-line management of childhood diarrhea at primary healthcare facilities [11]. Many African countries have adopted or adapted IMCI policies into their national health systems and pre-service training programs; however, implementation and adherence remain inconsistent due to resource limitations, workforce capacity, and health system constraints. Complementing IMCI, the World Health Organization (WHO) recommends oral rehydration therapy (ORT) and zinc supplementation as standard treatment for diarrheal diseases. Although most countries include ORT and zinc in essential medicines lists and primary care protocols, challenges in supply, access, and proper utilization persist. Preventive measures are increasingly embedded in national policy through immunization programs, particularly the progressive introduction of rotavirus vaccines, which have demonstrated significant reductions in diarrheal morbidity where coverage is high. Additionally, water, sanitation,

and hygiene (WASH) policies form a critical pillar of prevention, emphasizing equitable infrastructure investments, especially in rural and informal urban settlements [12]. Beyond routine care, governments maintain emergency response and disease-specific plans, including cholera preparedness, mass vaccination campaigns, and emergency water provision, highlighting the importance of intersectoral coordination and surge capacity in the context of climate-driven events and floods.

What government interventions have worked examples and evidence

Government interventions have demonstrated significant success in reducing the burden of diarrheal diseases in many regions, particularly in sub-Saharan Africa, when implemented systematically and at scale. Immunization campaigns, especially the routine administration of rotavirus vaccines, have been highly effective in reducing severe rotavirus infections among children [13]. Where vaccine coverage is high and sustained, there is clear evidence of declines in hospitalizations due to rotavirus, and continent-wide introduction of the vaccine has accelerated these positive outcomes, illustrating the critical role of national immunization strategies. Similarly, community health worker (CHW) programs, coupled with the Integrated Management of Childhood Illness (IMCI) framework, have proven effective in improving access to appropriate case management and oral rehydration therapy (ORT). The success of these programs depends on ensuring that CHWs are adequately trained, supplied, and consistently supported. Innovative approaches, such as electronic IMCI variants, show promise in enhancing adherence to clinical guidelines, thereby improving care quality. Additionally, investments in water, sanitation, and hygiene (WASH) initiatives ranging from safe water provision and improved sanitation infrastructure to behavior change campaigns have consistently yielded population-level reductions in diarrheal incidence [14]. The impact of WASH programs is particularly pronounced when communities are engaged and take ownership of implementation, underscoring the importance of integrating infrastructure improvements with participatory health promotion strategies.

Persistent gaps and barriers to effective policy implementation

Persistent gaps and barriers to effective policy implementation continue to undermine efforts to reduce diarrhea-related morbidity and mortality in Sub-Saharan Africa. Studies indicate significant supply and guideline adherence gaps, with frontline health facilities often exhibiting suboptimal compliance with WHO and IMCI diarrhea treatment guidelines, coupled with inconsistent availability of essential commodities such as oral rehydration salts (ORS) and zinc. Financing and sustainability challenges further exacerbate these issues, as investments in water, sanitation, and hygiene (WASH) infrastructure and routine immunization programs place considerable strain on national budgets [15]. Many countries remain heavily reliant on donor support, which can create fragile systems and necessitate difficult trade-offs between immediate outbreak response and long-term preventive measures. Equity and geographic disparities persist, with urban slums, remote rural communities, and conflict-affected populations disproportionately lacking access to vaccines, clean water, sanitation, and basic healthcare services. Policy frameworks frequently fail to address these inequities adequately, leaving vulnerable populations at heightened risk. Compounding these challenges are climate and environmental risks: increasing frequency of extreme weather events, such as floods and droughts, contributes to recurring cholera and diarrheal outbreaks. Existing policies often lack climate-informed preparedness and resilient infrastructure planning, leaving communities insufficiently protected against environmentally driven health crises [16]. Addressing these multidimensional barriers requires integrated, sustainable, and equity-focused policy approaches.

The future role of public health authorities — strategic functions

The future role of public health authorities (PHAs) at both national and subnational levels must evolve beyond traditional program implementation to become leaders in comprehensive systems transformation. Central to this shift is the integration of policy and multisectoral governance, whereby PHAs institutionalize formal coordination mechanisms across health, water, finance, education, environment, and urban planning sectors, ensuring joint accountability, financing, and measurable outcomes [17]. National strategies for diarrhea control, for example, should merge immunization, WASH, nutrition, and emergency preparedness into unified roadmaps with clearly defined targets. Equally critical is strengthening data-driven surveillance and adaptive policymaking, leveraging enhanced laboratory capacities, routine pathogen monitoring, and digital reporting systems such as e-IMCI and DHIS2, which enable rapid response to changing epidemiological patterns and facilitate targeted interventions, including vaccination campaigns, WASH improvements, and efficient stock management. Sustainable financing and procurement resilience are also essential, with PHAs leading blended financing initiatives that combine domestic budgets, innovative funding mechanisms, and strategic donor partnerships, alongside regional procurement pools to ensure continuous availability of vaccines, ORS, and essential therapeutics even during global shortages. Community-centered delivery and behavior-change interventions, including scaled community health worker programs, school-based WASH initiatives, and localized microplans with dedicated financing, empower populations to adopt safe hygiene and effective treatment practices. Policies must also prioritize equity by using disaggregated data to reach underserved, rural, and conflict-affected populations, integrate climate resilience into planning, pre-position emergency supplies, and strengthen outbreak preparedness [18]. Finally, PHAs should champion innovation and local capacity building by supporting regional production hubs for key supplies, investing in digital

health technologies, and fostering partnerships with academia and the private sector to inform evidence-based policy development.

Policy recommendations — an actionable agenda

To effectively reduce the burden of diarrheal diseases, a comprehensive and actionable policy agenda is essential. Countries should adopt national integrated diarrhea control strategies with clearly defined, time-bound targets for reducing severe diarrhea, linking these targets to immunization coverage, nutrition programs, WASH initiatives, and disease surveillance indicators [19]. Core interventions, such as vaccines, oral rehydration solution (ORS) with zinc, and WASH operations must be funded through recurrent national budgets rather than relying solely on donor grants, ensuring long-term sustainability. Digital surveillance systems and electronic integrated management of childhood illness (e-IMCI) should be scaled at the primary care level, accompanied by routine performance audits to improve adherence to clinical guidelines. Multisectoral financing instruments, such as pooled WASH-health funds, can support joint investments in infrastructure and community behavior change programs. Equity must be prioritized through data-driven targeting, with disaggregated monitoring and dedicated outreach for hard-to-reach populations. Climate-resilient WASH infrastructure should be built, integrating early-warning systems into public health emergency planning. Local and regional procurement hubs can reduce supply vulnerabilities and lower costs for vaccines and essential supplies. Strengthening community health worker capacity, supervision, and supply chains is critical to delivering reliable case management and preventive messaging [20]. Finally, embedding operational research and rapid learning cycles allows public health authorities to pilot innovative approaches, including digital adherence tools and novel vaccines, scaling interventions that are locally cost-effective and evidence-based.

Research and monitoring priorities

Research and monitoring priorities for addressing diarrheal diseases must focus on generating high-quality, context-specific evidence that can guide policy and programmatic interventions. First, there is a critical need for improved country-level data on the etiologic drivers of diarrhoea across diverse settings. Understanding the predominant pathogens and their epidemiological patterns will allow policymakers to optimize vaccine deployment strategies and refine antibiotic use, ensuring interventions are both effective and contextually appropriate. Second, implementation research should examine sustainable financing models for water, sanitation, and hygiene (WASH) programs, as well as the effectiveness of integrated service delivery approaches that combine WASH with health interventions [21]. Such research is essential to ensure that interventions are scalable, cost-effective, and have a measurable impact on diarrhoeal disease reduction. Third, the evaluation of digital health innovations, including digital Integrated Management of Childhood Illness (IMCI) tools and community health worker (CHW) supervision models, is crucial for improving adherence to clinical guidelines. These tools can enhance the timely administration of oral rehydration salts (ORS) and zinc, critical components of diarrhoea management. By prioritizing these research areas, health systems can develop evidence-driven strategies that reduce morbidity and mortality, improve service delivery, and support sustainable, context-specific interventions in vulnerable populations.

CONCLUSION

In conclusion, diarrheal diseases remain a significant public health challenge in Africa, disproportionately affecting children under five and highlighting persistent inequities in health access, infrastructure, and service delivery. Despite the availability of proven interventions such as oral rehydration therapy, zinc supplementation, rotavirus vaccination, and WASH initiatives, their impact is constrained by gaps in policy prioritization, financing, supply chains, and implementation capacity. The future role of public health authorities must therefore extend beyond routine program delivery to encompass multisectoral coordination, data-driven policymaking, sustainable financing, and community-centered approaches. Strengthening surveillance systems, integrating digital health innovations, and ensuring equitable access to preventive and curative services are critical for achieving meaningful reductions in diarrheal morbidity and mortality. Moreover, embedding climate resilience, equity-focused targeting, and operational research into national strategies will enhance adaptive capacity and sustainability. Ultimately, well-resourced, coordinated, and evidence-based government interventions are essential to secure healthier futures for Africa's children and to meet global child survival and health equity targets.

REFERENCES

1. Getachew, Z., Asefa, N., Gashaw, T., Birhanu, A., Debella, A., Balis, B., et al: Diarrheal disease and associated factors among children aged 6 to 59 months in Oda Bultum District, Eastern Ethiopia: a community-based cross-sectional study. BMC Infectious Diseases. 24, 303 (2024). https://doi.org/10.1186/s12879-024-09169-4
2. Alum, E. U., Obeagu, E. I.,Ugwu, O. P. C. Curbing Diarrhea in Children below five years old: The sub-Saharan African Standpoint.*J. New Medical Innovations and Research.* 2024;5(1); DOI:10.31579/2767-7370/083
3. Telmesani, A.M.: Oral rehydration salts, zinc supplement and rotavirus vaccine in the management of childhood acute diarrhea. J Family Community Med. 17, 79–82 (2010). https://doi.org/10.4103/1319-1683.71988

4.Ugwu, O. P. C., Alum, E. U., Uhama, K. C. (2024). Role of Phytochemical-Rich Foods in Mitigating Diarrhea among Diabetic Patients. Research Invention Journal of Scientific and Experimental Sciences. 3(1):45-55.
5.Cerf, M.E.: The Sustainable Development Goals: Contextualizing Africa's Economic and Health Landscape. Glob Chall. 2, 1800014 (2018). https://doi.org/10.1002/gch2.201800014
6.Raina, N., Khanna, R., Gupta, S., Jayathilaka, C.A., Mehta, R., Behera, S.: Progress in achieving SDG targets for mortality reduction among mothers, newborns, and children in the WHO South-East Asia Region. Lancet Reg Health Southeast Asia. 18, 100307 (2023). https://doi.org/10.1016/j.lansea.2023.100307
7.Fuller, J.A., Westphal, J.A., Kenney, B., Eisenberg, J.N.S.: The joint effects of water and sanitation on diarrheal disease: A multi-country analysis of the Demographic and Health Surveys. Trop Med Int Health. 20, 284–292 (2015). https://doi.org/10.1111/tmi.12441
8.Obeagu E I, Ugwu O P C., Alum E U. Enhancing quality water, good sanitation, and proper hygiene is the panacea to diarrhea control and the attainment of some related sustainable development goals: A review. Medicine (Baltimore). 2024 Sep 20;103(38):e39578. doi: 10.1097/MD.0000000000039578. PMID: 39312342; PMCID: PMC11419503.
9.Adedokun, S.T., Yaya, S.: Prevalence of oral rehydration solution use and its determinants in the treatment of diarrhea among under-five children in sub-Saharan Africa. PLoS One. 19, e0303193 (2024). https://doi.org/10.1371/journal.pone.0303193
10. Awor P, Wamani H, Bwire G, Jagoe G, Peterson S (2012). Private sector drug shops in integrated community case management of malaria, pneumonia, and diarrhea in children in Uganda. *The American journal of tropical medicine and hygiene*, *87*, *(5)*, *92*, *doi: 10.4269/ajtmh.2012.11-0791*.
11. Deichsel, E.L., Keita, A.M., Verani, J.R., Powell, H., Jamka, L.P., Hossain, M.J., et al.: Management of Diarrhea in Young Children in Sub-Saharan Africa: Adherence to World Health Organization Recommendations During the Global Enteric Multisite Study (2007–2011) and the Vaccine Impact of Diarrhea in Africa (VIDA) Study (2015–2018). Clin Infect Dis. 76, S23–S31 (2023). https://doi.org/10.1093/cid/ciac926
12. Omuna D., Obaroh I. O., Alum, E. U., Akiyode O. O., Eniru E. I., Tiyo C. E & Omoding, J. (2024). Impacts of climate change on water security in Uganda: A review. Int. J. Adv. Multidiscip. Res. 11(9): 47-60. DOI: http://dx.doi.org/10.22192/ijamr.2024.11.09.005
13. Agwu E, Oming S, Moazzam M. L (2015). Prevalence of Cryptosporidiosis among diarrhea patients attending clinics in Bushenyi district of Uganda. Spec parasite pathogens J, 1, (1), 01-08.
14. Thomas, L.S., Jordaan, J., Pillay, Y., Buch, E.: Contributions of a community health worker program in improving district health system performance in South Africa, using routine health service variables in a quasi-experimental study design. BMC Health Services Research. 25, 1105 (2025). https://doi.org/10.1186/s12913-025-12772-z
15. Critchley J. A, Ejemot-Nwadiaro R. I, Ehiri J. E, Arikpo D, Meremikwu M. M (2015). Hand washing promotion for preventing diarrhea. *Cochrane Database of Systematic Reviews*, *9*, *9. Art. No.: CD004265. DOI: 10.100.*
16. Wright, C.Y., Kapwata, T., Naidoo, N., Asante, K.P., Arku, R.E., Cissé, G., et al.: Climate Change and Human Health in Africa in Relation to Opportunities to Strengthen Mitigating Potential and Adaptive Capacity: Strategies to Inform an African "Brains Trust." Ann Glob Health. 90, 7. https://doi.org/10.5334/aogh.4260
17. Guerrero-Torres, L., Shroff, Z.C., Hanefeld, J., Lee, V.J., Lynes, S., Muvunyi, C., et al: Governance and structure of national public health agencies: a critical foundation for strengthening public health security. BMJ Glob Health. 10, e017724 (2025). https://doi.org/10.1136/bmjgh-2024-017724
18. Ogban G. I, Ndueso E. M, Iwuafor A. A, Emanghe U. E, Ushie S. N, Ejemot-Nwadiaro R. I (2020). Basic Knowledge of Childhood Diarrhea and Health-seeking Practices of Caregivers of Under-five ChildreninCalabar-South, Calabar, Nigeria. *Asian Journal of Medicine and Health*, *18*, *(4)*, *12-23. https://doi.org/10.9734/ajmah/2020/v18i430195*.
19. Thystrup, C., Majowicz, S.E., Kitila, D.B., Desta, B.N., Fayemi, O.E., Ayolabi, C.I., et al.: Etiology-specific incidence and mortality of diarrheal diseases in the African region: a systematic review and meta-analysis. BMC Public Health. 24, 1864 (2024). https://doi.org/10.1186/s12889-024-19334-8
20. Mosadeghrad, A.M., Isfahani, P., Eslambolchi, L., Zahmatkesh, M., Afshari, M.: Strategies to strengthen a climate-resilient health system: a scoping review. Globalization and Health. 19, 62 (2023). https://doi.org/10.1186/s12992-023-00965-2
21. Ugwu, O. P. C., Alum, E. U., Uhama, K. C. (2024). Phytochemicals and Vitamins as Adjunct Therapies for Diarrhea in Diabetic Patients. Research Invention Journal of Research in Medical Sciences. 3(2):27-37.

CITE AS: Nyiramana Mukamurera P. (2026). Policy Development and Government Interventions in Diarrhea Control: The Future Role of Public Health Authorities in Africa. NEWPORT INTERNATIONAL JOURNAL OF SCIENTIFIC AND EXPERIMENTAL SCIENCES, 7(1):25-30. https://doi.org/10.59298/NIJSES/2026/71.2530