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Responsible One Health: integrating evidence to address emerging public health challenges in the Sahel region

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Abstract

In recent years, Central African and Sahelian countries have faced an increasingly complex convergence of health, environmental, and social challenges. Climate variability, fragile health systems, emerging and re-emerging infectious diseases, and limited diagnostic and research capacities demand integrated, context-specific responses. The One Health approach – recognizing the interconnectedness of human, animal, and environmental health – offers a robust conceptual and operational framework to address these challenges. The articles presented in this issue of the Sahelian Journal of Responsible One Health provide timely and compelling evidence of how One Health principles can be translated into research, practice, and policy across the Central Sahel.

Introduction

The article “Microbial safety of community water sources in Mbouo-Bandjoun, Cameroon: a preliminary assessment” highlights the central role of environmental determinants in public health. In many rural and peri-urban settings across the Sahel and Central Africa, reliance on untreated community water sources exposes populations to fecal contamination and waterborne pathogens, contributing significantly to preventable morbidity and mortality. This preliminary assessment underscores the need for routine microbiological surveillance, improved water management infrastructure, and community-based hygiene education. From a One Health perspective, water safety is not merely an environmental issue but a critical interface linking ecosystem integrity, human behavior, and infectious disease transmission.

The contribution “125 years of immunology: from the 2025 Nobel Prize to research prospects in Chad" provides a reflective and forward-looking analysis of immunological science. By linking the historical milestones of immunology to the most recent Nobel Prize in Physiology or Medicine, the article emphasizes the relevance of fundamental discoveries to contemporary public health challenges in low-resource settings. The authors argue persuasively that strengthening immunological research and training in Chad is essential for improving epidemic preparedness, vaccine evaluation, and immune-based diagnostics. This work reinforces the idea that global scientific progress must be accompanied by local capacity building if its benefits are to be equitably realized.

Understanding vaccine acceptance remains a cornerstone of effective public health interventions. The article “Understanding COVID-19 vaccination intention among healthcare workers in N’Djamena, Chad: insights for enhanced immunization strategies in Africa” addresses this critical issue by examining the determinants of vaccination intention among frontline health professionals. As trusted sources of health information, healthcare workers play a decisive role in shaping public attitudes toward immunization. The findings reveal that vaccination intention is influenced by knowledge, risk perception, and institutional trust, highlighting the need for targeted communication strategies and continuous professional education. Beyond COVID-19, these insights are highly relevant for future vaccination campaigns against emerging infectious threats in Africa.

The burden of neglected tropical diseases remains high in the Sahel. In “High seroprevalence and associated risk factors of visceral leishmaniasis in the Léré Health District, Chad”, the authors report alarming levels of seroprevalence and identify key environmental and behavioral risk factors. Visceral leishmaniasis exemplifies the One Health paradigm, involving complex interactions among human populations, animal reservoirs, and vector ecology. The study calls for integrated surveillance systems, combining human and veterinary health data with entomological monitoring, to design effective prevention and control strategies in endemic areas.

The article "Establishment of a cytopathology unit and implementation of HPV genotyping for cervical cancer screening at the University Hospital Complex "Le Bon Samaritain", N'Djamena, Chad" documents an important step toward strengthening local diagnostic capacity. Cervical cancer remains a leading cause of cancer-related mortality among women in Sub-Saharan Africa, largely due to limited access to screening and early diagnosis. The establishment of cytopathology and HPV genotyping services represents a major advance in preventive oncology, enabling evidencebased screening strategies and supporting HPV vaccination policies. This experience demonstrates how investment in laboratory infrastructure and human resources can yield tangible public health benefits within a One Health framework.

Translating scientific evidence into sustainable policies and interventions will require long-term commitment from governments, academic institutions, and international partners. A responsible One Health approach – rooted in local realities and informed by global science – offers a pathway toward more resilient, equitable, and effective health systems in the Sahel and beyond.

The Editorial Board wishes you a Merry Christmas and a Happy New Year.

The Editorial Board

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