Title: Emerging flu-like illnesses and Disease X in Africa with insights into therapeutic strategies and pandemic preparedness

Author names: Anwar Parvez, Md. Tarakul Islam, Rukaiya Zaman, Md Hasibul Hasan, Nusrat Jahan Mim, Md Mahmudul Hasan, Sharifa Sultana, Shanto Biswas & Partha Biswas

Abstract: Public health systems throughout Africa continue to face challenges from emerging and re-emerging flu-like infections, where the risk of major epidemics is increased by inadequate surveillance infrastructure, insufficient diagnostic capacity, and available treatment. Zoonotic disease is a highly infectious illness, can generally be transmitted from animals to humans and impacts millions of individuals worldwide, resulting in significant morbidity, mortality, and economic repercussions. To address this gap, we sought available information on zoonotic and flu-like infections in Africa and consolidated the data into a comprehensive summary utilizing suitable methodologies. Global attention has been focused on the Democratic Republic of Congo's (DRC) susceptibility to new respiratory viruses of zoonotic origin since the enigmatic "Disease X" recently surfaced there. This review summarizes the most recent data on the etiological agents, clinical characteristics, epidemiology, and management approaches of flu-like illnesses in Africa, with a focus on Disease X as a pandemic preparedness model. By contrasting well-known respiratory illnesses, including influenza, respiratory syncytial virus (RSV), and COVID-19, it highlights connections in transmission patterns and diagnostic difficulties. Emerging therapy strategies, diagnostic technology, and the possible use of natural substances to treat such infections are also included in the review. The findings of the study emphasize how environmental variables, zoonotic spillovers, and a lack of proper healthcare infrastructure combine to make Africa more susceptible to respiratory epidemics. Strengthening integrated disease surveillance, increasing access to rapid molecular diagnostics, speeding up vaccination development, and investigating phytochemical-based therapies as supplementary approaches are likely remedies. This article offers a forward-looking strategy for strengthening Africa's health systems, informing evidence-based interventions, and increasing its readiness for emerging infectious diseases and future pandemics by combining these findings.

Keywords: Zoonotic disease, Disease X, Respiratory infections, Viral outbreaks, Future pandemic

https://link.springer.com/article/10.1186/s12982-026-01459-3

https://doi.org/10.1186/s12982-026-01459-3