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A mysterious disease in the Democratic Republic of the Congo: the crucial role of the global health approach

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The emergence of a mysterious disease in the Democratic Republic of Congo (DRC) is a stark warning about the vulnerability of our interconnected world. The disease, which is currently mainly affecting children under the age of 14, manifests itself with symptoms such as fever, cough, headache, breathing difficulties and anemia. The Panzi zone in Kwango Province is particularly affected, characterized by high malnutrition, low vaccination coverage and limited infrastructure. This health crisis is further aggravated by concomitant epidemics of mpox and seasonal influenza and the region's challenging terrain and limited telecommunications have complicated initial response efforts.

While the number of infections appears consistent with seasonal patterns during the rainy season, health authorities continue to investigate the precise cause of the outbreak, collecting additional samples for comprehensive analysis. Recent developments provide further insight into the mysterious disease outbreak. According to the WHO (https://www.cidrap.umn.edu/malaria/initial-samples-dr-congo-unexplained-outbreak-positive-malaria), preliminary testing of 12 initial samples revealed that 10 were positive for malaria, suggesting the possibility of multiple coexisting pathogens. The Ministry of Health of the DRC later announced that the mysterious disease in Panzi has been identified as 'a severe form of malaria' compounded by malnutrition and presenting respiratory symptoms. This announcement, reported by Reuters (https://www.reuters.com/world/africa/congos-health-ministry-says-unknown-disease-is-severe-malaria-2024-12-17/), clarified that the outbreak has led to 143 deaths in Kwango Province as of November.

A suspected death from fever with hemorrhagic symptoms in a 55-year-old recently returned from the DRC was reported by the Public Health Hygiene Service of the Ulss 2 Marca Trevigiana in Treviso, Italy. Investigations are ongoing in collaboration with the Spallanzani Institute in Rome to determine the origin of the illness. Public health measures, including home isolation for the known contact of the deceased, have been enacted in coordination with the Italian Ministry of Health, the Spallanzani Institute, and the Italian National Institute of Health. Two additional precautionary cases in Italy – a man in Lucca and a woman in Cosenza – were previously noted, but neither case involved visits to the outbreak area, and both recovered without complications.

At a time when globalization has broken down trade, cultural and political barriers, health threats in one region can quickly become global concerns. The ease with which people travel and international trade facilitate the spread of viruses and pathogens, accelerating the possibility of local outbreaks turning into global epidemics. The speed with which the virus has spread demonstrates the urgent need for a responsive and effective global health system. The COVID-19 pandemic has amplified this reality, showing how an epidemic can have enormous implications for global public health [1].

In this context, the One Health strategy emerges as a fundamental approach to addressing global health crises. One Health integrates human, animal and environmental health, recognizing that the health of one sphere cannot be separated from the others. Infectious disease outbreaks are never limited to a single area, but often involve complex and interconnected dynamics. Zoonotic diseases, which jump from the animal to the human world, are one of the clearest examples of this interconnectedness, as in the case of Ebola and Marburg infections. The One Health paradigm therefore represents a holistic response, which does not merely isolate symptoms, but investigates the origins of the disease and the factors that accelerate its spread, both environmentally and socially [2].

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The WHO response to the recent outbreak in the DRC, with the deployment of a multidisciplinary team, is a positive example of how this approach can be implemented. Bringing together experts in epidemiology, veterinary science, public health and the community, the response focused not only on the immediate management of the outbreak, but also on understanding the root causes, including possible zoonotic spillovers and environmental factors that may have contributed to the spread of the virus [3]. This multidisciplinary approach is essential, as unilateral solutions cannot address the full spectrum of variables involved. Collaboration between global and local institutions has also proven crucial in strengthening diagnostic and surveillance capabilities, reducing uncertainty and providing timely responses to the global community [4].

However, we cannot stop at the immediate response. The most important lesson we can learn from the current epidemic is that global health security is a shared responsibility. While the WHO has acted promptly, the international community must continue to support the DRC by providing logistical, technological and financial resources. Greater global collaboration is needed to ensure that all countries, especially the most vulnerable, can effectively implement integrative health policies. Likewise, the large-scale adoption of One Health strategies is not only desirable, but essential to prevent similar emergencies in the future. Strengthening global health infrastructure and building capacity in all countries are crucial investments for global health security [5].

At the same time, the role of clear and accurate scientific communication cannot be underestimated. In times of crisis, misinformation and sensationalism can spread as rapidly as the disease itself, fueling unnecessary panic and undermining public trust. It is essential for health authorities, scientists, and the media to communicate in a language that is accessible and straightforward, focusing on facts and avoiding alarmist tones. Providing timely, evidence-based updates empowers citizens to understand the situation, adopt appropriate protective measures, and contribute to the collective effort without succumbing to fear. Transparency and simplicity in communication not only protect public confidence but also play a vital role in ensuring compliance with health interventions, thereby supporting the effectiveness of the global response.

Ultimately, the current crisis invites us to reflect on the need for a comprehensive, preventive and cooperative approach to health threats. The interconnections between human, animal and environmental health are too obvious to ignore. However, the problem is that sensationalism is sometimes stronger than scientific evidence, which can hinder the development of effective policies. As we monitor the situation in the DRC, we should consider creating mechanisms that allow for a rapid and coordinated response to health crises that can not only address the emergency, but also prevent others in the future. Global health is a collective good, and our commitment to protect it must be equally collective.

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Authors' contribution

Francesco Branda: Conceptualization, Investigation, Writing – Original Draft, Writing – Review & Editing. **Léon Tshilolo**: Investigation, Writing – Original Draft, Writing – Review & Editing. **Thierry Kalonji-Mukendi**: Investigation, Writing – Original Draft, Writing – Review & Editing. **Massimo Ciccozzi**: Validation, Supervision, Writing – Original Draft, Writing – Review & Editing. **Fabio Scarpa**: Investigation, Writing – Original Draft, Writing – Review & Editing.

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