

CLIMATE CHANGE, ADAPTATION AND INFECTIOUS DISEASES SURVEILLANCE

Health systems in Africa can be more resilient to emerging and re-emerging diseases by incorporating climate information into disease surveillance systems.



Two young boys wait to be given their dose of anti-malarials in Basse. Photo: LSHTM

Key messages

- Health systems need to adapt to climate change and other environmental changes that increase disease transmission and undermine current disease control strategies.
- National adaptation plans identify the use of climate information on disease surveillance and early warning systems for climate sensitive diseases but implementation is slow.
- Post-COVID improvements in national surveillance systems, including digitilisation and One Health, have increased health system resilience in general but not for climate change.

Surveillance of climate-sensitive infectious diseases

Africa has a high burden of infectious diseases that may be worsened by climate change. Managing climate risks or the effect of climate hazards on disease transmission is part of adaptation. Integrated climate and health surveillance systems, including early warning systems, are crucial for monitoring and responding to current and future health effects. This policy brief summarises evidence from policy and evidence reviews and stakeholder interviews for the ENBEL project.

- Non-health data integration in disease surveillance remains limited with environmental data receiving the least attention.
- There is an important opportunity to use climate forecasts in disease control.
- Operationalisation of early warning systems is currently limited to malaria in East Africa for technical, capacity and funding reasons.



Figure 1. Surveillance activities to address climate risks and support adaptation

Surveillance and early warning are essential part of adaptation in the health sector

A review of national adaptation plans in East and Southern Africa identified that strengthening infectious disease surveillance was a priority for health sector planning. However, there is a lack of implementation of adaptation within the health system.



Key findings on vector-borne diseases

- Provincial (local) early warning systems (EWS) currently contributed to malaria control in East Africa. Despite the potential for the use of climate data for early warning at various time scales (daily to seasonal), there remain technical, capacity and funding barriers to implementation.
- Environmental data are rarely integrated into surveillance systems. One Health coordination structures are taking shape and promoting the collection and use of integrated data from disease, animals, and the environment but currently not sufficient to address climate risks.
- There is very little assessment of the role of climate in changes in disease, disease emergence or outbreaks. Lack of attribution studies further undermines the implementation of adaptation. There is an urgent need for long-term prediction and planning for disease transmission and surveillance that can inform national adaptation plans.

Key findings on water-borne diseases

- Surveillance for climate-sensitive water-borne diseases is less of a priority and capacity is more limited. However, approaches for the control of water-related diseases are different and there has been progress in the development of climate resilient water, sanitation and hygiene (WASH).
- Community based surveillance measures are being promoted to address lack of capacity in the national system.

Challenges to including climate information into surveillance for infectious diseases

- **Technical capacity**. Lack of integrated systems to collect epidemiological, climate, and environmental data for surveillance. Lack of health data (e.g. dengue cases) as sufficient spatial resolution for developing EWS.
- Skills and training. There is a lack of dedicated skilled personnel to undertake research and EWS development. Lack of knowledge on climate-health risks and lack of appreciation in health sector of the potential benefits of using climate information.
- **Funding**. Limited funding to support longterm planning, expansion and continuity of EWS even when pilot projects are successful.
- Lack of collaboration. Limited opportunities for sharing best practices and lessons learned to inform decision-makers and for public awareness on the use of climate information. Weak multi-sectoral coordination and collaboration. Lack of coordination between national, district and community levels.

Policy recommendations

- Promote the integration of climate information into disease surveillance systems to identify climate-related impacts and predict disease outbreaks.
- Develop and implement training programs to enhance healthcare professionals' ability to use climate data for infectious disease surveillance and response.
- Implement and evaluate climate-based early warning systems and support mechanisms for regional collaboration.
- Support research initiatives to further understand climate change impacts on infectious diseases (including water-borne diseases) in different regions to provide evidence for adaptation planning.

References

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