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Enhancing digital disease surveillance in the ECOWAS Region: Progress, challenges, and way forward

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Introduction

Digitalizing disease surveillance improves case reporting and enables timely outbreak detection and response, enhancing health outcomes. However, adoption in Africa remains limited. This study assessed the integration of digital platforms into surveillance systems and explored health leaders' perspectives across the ECOWAS region.

Methods

A cross-sectional study with a mixed-methods sequential exploratory design was conducted. Data collection involved a desk review (2015–2023 literature, reports, grey literature), an email-based survey, and expert consultations during a 3-day regional workshop. Survey participants were heads of surveillance, data policy, and health IT (SDH) units representing human and animal health sectors in all 15 ECOWAS Member States. Legal and technical experts also contributed.

Results

Digital platform adoption was universal at the national level (100%) but only 50% at the community and the lowest administrative levels, with variability across and within countries and sectors. Human health had full adoption (100%), while animal health adoption was lower (43%). DHIS2 was the most widely used platform. Human health reported higher single-platform use (73%, mostly DHIS2), compared to animal health (33%) using KoboToolbox (20%), DHIS2 (6%), and SISMAZ (7%). Key challenges included lack of interoperability and fragmented implementation. Survey and expert consensus supported establishing a harmonized data collection system and a regionally coordinated digital emergency response network, such as a regional Emergency Operations Center (EOC).

Conclusion

Despite moderate adoption, digital surveillance systems in ECOWAS remain fragmented, particularly at lower administrative levels and in the animal health sector. To improve outbreak detection and response, ECOWAS must prioritize interoperable, integrated digital systems and establish a regional data exchange framework. Leveraging emerging technologies and standardizing platforms will be essential for building a resilient and responsive surveillance architecture.