Vector control strategy for *Anopheles stephensi* in Africa

Global challenges and opportunities for malaria control were perfectly outlined in *The Lancet Microbe's* Editorial,[1] emphasising the effects of the COVID-19 pandemic; growing political instability and violence; and socioeconomic, demographic, and geographical inequalities on malaria burden. Another serious threat to the global health effort in Africa is rapidly developing: the emergence and spread of the invasive malaria vector, *Anopheles stephensi* (*An stephensi*).[2] *An stephensi* is a competent vector of *Plasmodium vivax* and *Plasmodium falciparum* and a probable vector of zoonotic malaria parasites (appendix p 1).[2] The presence of *An stephensi* has been reported in Djibouti, Ethiopia, Somalia, and Sudan (appendix p 1).[2] However, so far, the existence of *An stephensi* has been detected accidently, indicating the insufficient capacity of surveillance systems in the area to find or identify the vector.[3,4] Nevertheless, after extensive training in 2021, the vector surveillance system in Sudan confirmed the distribution of *An stephensi* near areas of high movement of humans, animals, and goods across international borders.[5] These findings suggest a high risk of potential non-detected spread of *An stephensi*, and the appendix (p 1) shows countries at confirmed, high, and potential risk.

According to the malaria world report published by WHO in December, 2021, additional threats of the spread of *An stephensi* to the prevention and control of malaria in Africa include zoophilic, exophagic, and exophilic preferences of this invasive vector (appendix p 1). *An stephensi* has shown resistance to the insecticides recommended by WHO for insecticide-treated nets and indoor residual spraying, hindering the control of this vector through these tools. More importantly, Africa's vector surveillance systems are lagging in monitoring changes in vector composition and distribution.[3,4] This delay is mainly because of insufficient financial and workforce resources, advanced molecular and sequencing techniques, and training. Moreover, *An stephensi* mostly breeds in man-made water containers, which in turn means an extended malaria transmission season because many people store water due to absence of sustainable access to water supply. This issue is particularly important in urban and periurban settings, where dense population, inadequate health-care and vector control services, and the persistent need to store water mean that malaria epidemics are highly predicted.[4,5]

Malaria control programmes in Africa need to reform their vector control strategy to effectively control and prevent further spread of this invasive vector. This reform should include increasing the capacity of the vector surveillance system by resource mobilisations, advanced training, and the use of molecular and sequencing techniques for monitoring invasive disease vectors. Global partners and donors should support the implementation of integrated vector management with a focus on vector control strategies that do not include insecticides, such as larval source management. Particular attention needs to be paid to climate change and humanitarian emergencies as they have been identified as major drivers for the transmission of malaria and other vector-borne diseases.[6]

We declare no competing interests.

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See Online for appendix