Entomological risk assessment of dengue transmission in two key Kenyan cities

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INTRODUCTION

Emergence and re-emergence of dengue (DEN) is becoming a public health threat in several African countries, including Kenya. Dengue epidemics have been linked to the DEN virus adapting to the local domestic \textit{Aedes aegypti} vectors, as well as unplanned urbanisation. Entomological indices provide a good assessment of the risk of disease epidemics, but such data on the vector in major cities in Kenya are lacking despite the regional disease re-emergence; hence, an investigation is a priority.

OBJECTIVE

To estimate the house index (HI) for the DEN vector \textit{Aedes aegypti} in two urban cities of Kenya (Kisumu and Mombasa).

RESULTS

Out of 200 houses surveyed per site, HI was higher in Mombasa compared to Kisumu ($\chi^2 = 4.69$, df = 1, $p = 0.03$). Also, for both sites, HI was higher during the long rainy season compared to the short rainy season, although there was no significant difference.

CONCLUSIONS

- The Pan American Health Organization defines $>5\%$ threshold as indicative of risk of transmission of dengue; and the overall HI for Kisumu was 14.5% and Mombasa 23.5%.
- Extent of precipitation failed to affect the HI.
- Comprehensive risk assessment must include competence of the vector populations.

IMPACT

The study data are required to inform public health authorities about areas at risk of dengue epidemics.

REFERENCES