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Temporal Comparison of Malaria Incidence between Urban and Rural Areas in Uganda, 2020–2024

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Background: Malaria has traditionally affected rural populations, but transmission is increasing in rapidly-growing urban areas of sub-Saharan Africa. We compared malaria incidence trends in urban and rural Uganda to inform targeted interventions.
Methods: We conducted an ecological analysis of monthly District Health Information Software-2 malaria data (2020–2024) for 10 cities and their districts, using confirmed outpatient malaria cases as the numerator and Uganda Bureau of Statistics population estimates as the denominator. We conducted linear regression analysis to assess differences between urban and rural settings using an interaction term between setting and time. The model included year, setting, and their interaction term.
Results: Malaria incidence declined over time in both settings, with a greater reduction in rural areas. Rural incidence decreased significantly from 318 to 254 per 1,000 population (p=0.02) while the decline in urban incidence from 249 to 198 per 1,000 population (p=0.34) was not significant. The difference in trends between urban and rural settings was statistically significant (interaction p=0.047).
Conclusion: Malaria incidence in Uganda declined over the study period, with a more significant decline in rural areas than urban areas. Uganda should sustain vector control and case management in rural areas while implementing targeted surveillance-driven interventions in urban hotspots such as improved housing and drainage of breeding sites.

Keywords

`Malaria incidence, rural and urban settings, Uganda`

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Professional Status of the Speaker

`Graduate Student`

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`Yes, I am a Junior Scientist.`

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