10-Year Analysis of Vector-borne Travel-Related Infectious Diseases in Singapore (2015 – 2024)

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Background:

Vector-borne travel-related infectious diseases (TRIDs) pose significant public health risks due to competent vectors in Singapore including Aedes aegypti. This analysis examined 10-year trends of imported vector-borne diseases to understand transmission patterns and identify at-risk travel populations for targeted interventions based on publicly reported data.

Materials & Methods:

A retrospective analysis of imported vector-borne diseases reported under Singapore's Infectious Diseases Act (2015-2024) was conducted. Data were analysed by disease type, residency status and travel purpose using descriptive statistics, focusing on malaria, Zika, chikungunya, leptospirosis and murine typhus.

Results:

Imported vector-borne diseases decreased from 2015 levels and plateaued from 2016 onwards, excluding COVID-19 pandemic years when travel restrictions were imposed. Disease-specific patterns emerged by residency: foreign residents accounted for most malaria cases (48.3%), while Singapore residents accounted for the majority of Zika (64.3%) and chikungunya (51.4%) cases. Among Singapore residents who contracted malaria, 59.6% were on holiday and 31.9% were on business trips/employment, with all reporting incomplete or no malaria prophylaxis. This analysis is limited by available publicly reported data, which varies in detail across diseases.

Conclusion:

The resurgence in imported vector-borne diseases post-pandemic and presence of competent vectors in Singapore underscores the need for targeted prevention strategies. Preliminary data analysis showed patterns where targeted interventions could be implemented, such as seasonal campaigns on malaria prevention timed with school holidays and peak travel periods to target leisure travellers. Enhanced surveillance data collection on exposure details and traveller profiles is essential for effective TRID prevention.