

The Traveller as a Sentinel: Reimagining Travel Medicine for Early Detection of Emerging Infections

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Introduction

The rapid globalization of the 21st century, characterized by unprecedented volumes of international travel and migration, has fundamentally altered the landscape of infectious disease dynamics. While travel medicine has traditionally focused on individual risk assessment and pre-travel prophylaxis, the recent series of global health emergencies—from the COVID-19 pandemic to the resurgence of Mpox and the geographical expansion of vector-borne diseases like Dengue—necessitate a paradigm shift. It is time to reimagine the traveller not merely as a passive recipient of healthcare, but as a proactive “sentinel” for the early detection and monitoring of emerging infections. International travellers, including tourists, expatriates, and migrants, act as biological bridges between diverse geographical regions. Because they often move between areas of varying endemicity, they are frequently the first to encounter and transport novel pathogens or drug-resistant strains. A febrile traveller returning from a region with an undiagnosed outbreak is often the first “signal” of a broader public health threat. Historically, travel-related cases have been instrumental in identifying the international spread of Zika, Chikungunya, and various influenza strains. However, this potential remains underutilized in many national surveillance systems. Transforming travel medicine into a sentinel tool requires a multi-faceted approach. First, there must be a shift from purely geographical risk assessment to a more dynamic, syndromic surveillance model. Clinical encounters in travel clinics—both pre- and post-travel—should be viewed as opportunities for data collection. Standardized reporting of travel-related symptoms and travel histories, integrated with regional and global health databases, can

provide real-time insights into disease movement. Second, the integration of advanced diagnostics at the point of care is crucial. The use of metagenomic sequencing and rapid diagnostic tests for returning travellers can significantly reduce the “diagnostic gap” for unknown pathogens. When a traveller presents with unusual symptoms, the travel medicine specialist serves as the front-line investigator, bridging the gap between clinical medicine and global health security. Finally, strengthening the link between travel medicine practitioners and public health authorities is essential. This editorial calls for the formal integration of travel clinic networks into national and international surveillance frameworks, such as GeoSentinel. By doing so, we move beyond individual patient care to a broader mission: safeguarding global health through early detection and rapid response. As we look toward the future, the role of the travel medicine specialist must evolve. We are no longer just advisors for vaccines and malaria pills; we are the guardians at the gates of global health. By recognizing the traveller as a sentinel, we can better anticipate, identify, and mitigate the infectious threats of an interconnected world.

References

1. Verma DK, Rameshwari R, Meena J. Health and environmental risk of alpha emitter radium. *In Hazardous Chemicals* 2025 Jan 1 (pp. 713-722). Academic Press.
2. Zhou S, Han L, Liu P, Zheng ZJ. Global health governance for travel health: lessons learned from the coronavirus disease 2019 (COVID-19) outbreaks in large cruise ships. *Global Health Journal*. 2020 Dec 1;4(4):133-8.