



SOPHE FOCUS AREA:

Understanding the Problem:

Vector-borne diseases — illnesses spread by animals or insects such as ticks — are on the rise due to climate change and habitat loss, which push reservoir species into closer contact with human populations. Ticks are especially significant for vectors, carrying more pathogens than any other disease-carrying invertebrate and transmitting illnesses such as Lyme disease, spotted fevers, and tularemia. Most transmission to humans occurs during the tick's nymph stage, when the tick is small, causes no inflammation, and often goes unnoticed. As a result, many people are exposed to tick-borne diseases without ever realizing they were bitten.

Looking into the Literature:

Research has shown that health education specialists need direct training in infectious disease dynamics, not just communication theory, to respond effectively during outbreaks. Notably, the WHO has declared six Public Health Emergencies of International Concern since 2009, including H1N1, Ebola, and Zika, and these emerging infectious diseases already account for the largest share of global disease burden, a burden expected to grow with climate change. As climate change worsens the global disease burden, effective communication surrounding infectious diseases will become increasingly vital.

From the SOPHE Journals:

1. [Interdisciplinary Collaborations Required: Teaching Health Educators Infectious Disease Dynamics](#)
2. [Studying Vector-Borne Disease Transmission in Public Health Education Using a Geospatial Curriculum Approach](#)
3. [Zika Virus Awareness and Prevention Practices Among University Students in Miami: Fall 2016](#)

Summary of SOPHE's Recommendations

SOPHE recommends layered, practical prevention: apply tick-specific repellent before entering tall grass, overgrown trails, or high-tick-population areas during warm months; check thoroughly for ticks after time outdoors, closely examining the scalp, backs of knees, between toes, and the groin; contact a doctor promptly about abnormal symptoms following a known bite, since early detection is key to preventing long-term illness; and keep pets on monthly tick treatments, since ticks can detach from cats and dogs and be carried indoors. SOPHE also calls for continued public health education to raise health literacy around vector-borne disease as climate change increases human exposure risk.

Key Takeaways

- Ticks carry more pathogens than any other disease-carrying invertebrate, transmitting Lyme disease, spotted fevers, and tularemia.
- Most bites happen during the small, painless nymph stage, so people are often unaware they've been exposed, making prevention imperative. It is essential to wear tick spray, complete thorough checks, and get tested if strange symptoms appear.
- Climate change and habitat loss are pushing reservoir species and ticks into closer contact with humans.
- Continued public health education and interdisciplinary research are needed to keep pace with rising vector-borne disease risk.