

Challenges in maintaining capacities for outbreaks of other vector borne diseases

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Alternate title...

The Zika Crisis: A Public Health Entomology Opportunity

Endangered Species



Existing public health entomology capacities in the region

- ❑ **Highly heterogeneous**
- ❑ Most countries conduct routine vector surveillance
- ❑ Many countries have the capacity for insecticide resistance monitoring
- ❑ Highly variable infrastructure capacities
- ❑ **Resource limitations are ubiquitous**

Resources are focused on the diseases that produce the greatest public health burden

Key vector borne diseases in the Americas

- ❑ Malaria
- ❑ Dengue
- ❑ Chikungunya
- ❑ Lymphatic filariasis
- ❑ Other emerging arboviruses? i.e., Zika



- ❑ Chagas disease



- ❑ Leishmaniasis



- ❑ Onchocerciasis



- ❑ Schistosomiasis



Shifting public health burden

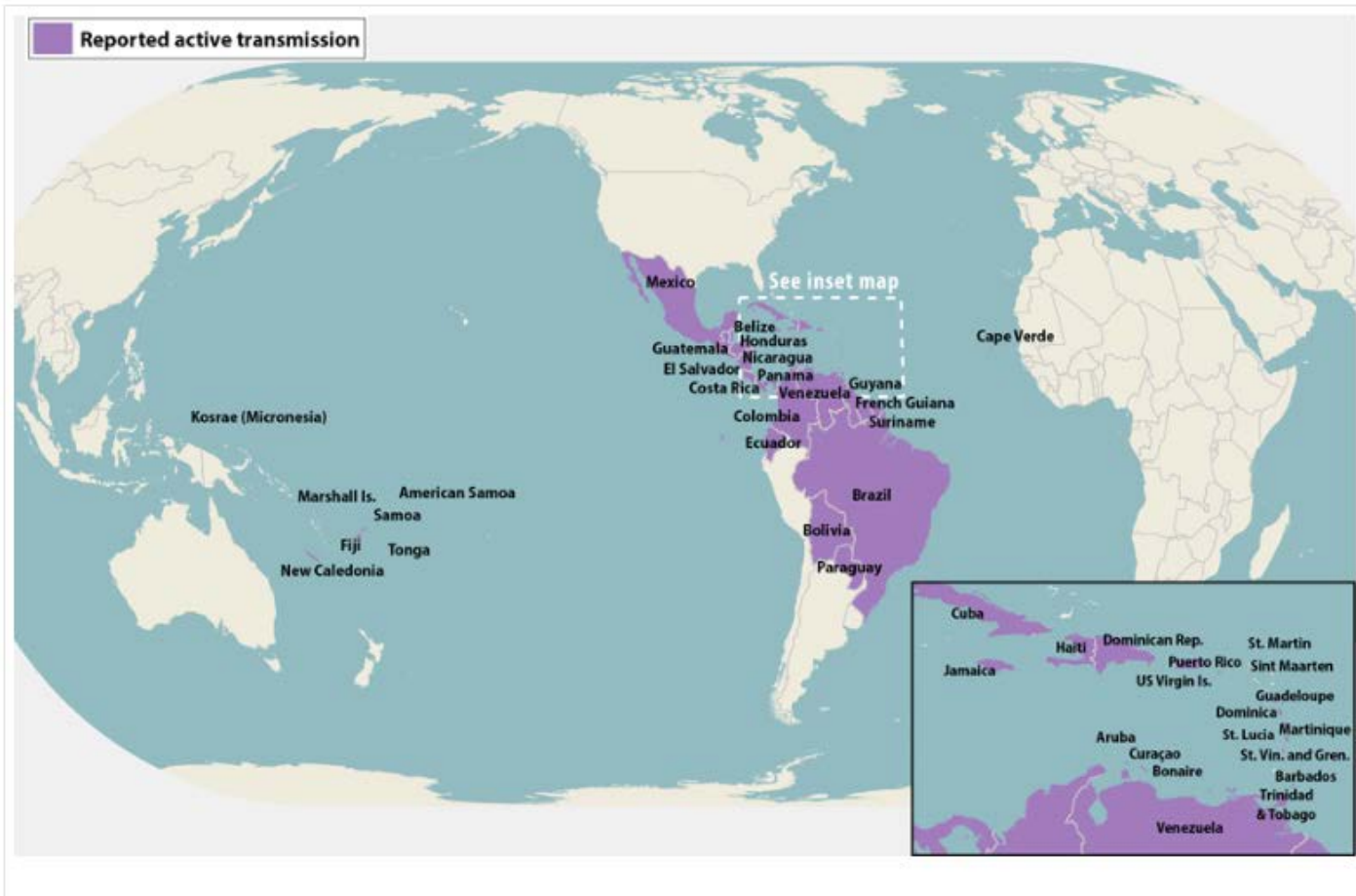
❑ Parasitic diseases:

- Onchocerciasis → nearly eliminated
- LF → continues to progress toward elimination
- Chagas → large-scale regional reductions
- Malaria → regional declines and current elimination push

❑ The vector borne diseases currently causing the greatest public health burden (Zika, dengue, and chikungunya) are arboviruses

❑ An IVM framework could be particularly useful in maintaining capacities that can be applied across vector borne diseases

Countries with current vector-borne Zika transmission



The current Zika outbreak

- ❑ Vector control is in the spotlight
- ❑ Widespread political will to bring outbreak under control
- ❑ We are facing a unique opportunity to strengthen public health entomology in the region
 - How do we do this in the most sustainable and impactful way?

Build lasting capacity

- ❑ Opportunities for further education in public health entomology
 - Scholarships for higher education
 - Certifications
 - Continuing education

- ❑ Job creation
 - Permanent positions in national programs
 - Professional
 - Technical

Enhance vector surveillance

- ❑ Incorporation of vector surveillance and control data into GIS platforms
- ❑ Novel surveillance tools
- ❑ Use of nontraditional indicators
- ❑ Insecticide resistance detection, intensity, and mechanisms

Vector control

- ❑ **WHO recommendations for emergency Zika vector control (18 March 2016):**
 - **Targeted residual spraying** of resting sites of *Aedes*spp. mosquitoes primarily inside and, to a lesser extent, around houses as the primary vector control intervention for immediate response.
 - **Space spraying** is effective inside buildings where *Aedes*spp. mosquitoes rest and bite. It has no residual effect. Its application outdoors only suppresses vector populations temporarily and is not as effective as indoor space spraying.
 - **Larval control** including source reduction and larviciding should be applied where appropriate through community mobilization.
 - **Personal protection** measures should be used to protect against day biting mosquitoes. These include the use of appropriate repellents and wearing of light-coloured loose fitting clothing. This is especially important during pregnancy.

Evaluation of vector control strategies

- ❑ Efficacy is key, but also scalability and feasibility
- ❑ What works best in which scenario: phased response plans
 - Emergency (widespread outbreak)
 - Routine (endemic transmission)
 - Maintenance (no transmission but vector is present)

Quality control mechanisms

- ❑ Training and refreshers offered to operational personnel
- ❑ Calibration and maintenance of equipment
- ❑ Proper personal protective equipment

Build lasting partnerships

- ❑ Central pillar of IVM
- ❑ Engage stakeholders
 - Community
 - Industry
 - Businesses
 - Other ministries
 - NGOs
 - Etc...
- ❑ Social mobilization

In conclusion...

- ❑ The current Zika crisis is offering us an unprecedented opportunity to build long-term capacity for public health entomology in the region
- ❑ We need to leverage these resources strategically to achieve the broadest and most integrated impact across vector-borne diseases

Thank you/Gracias/Obrigada/Merci

