

Florida Department of Health

Emergence of Oropouche Virus in Florida



Florida
HEALTH

March 26, 2025

Presenters



Marie-Claire Rowlinson, PhD, D(ABMM)

Bureau Chief

Bureau of Public Health Laboratories

Division of Disease Control and Health Protection

Andrea Morrison, PhD

Vector-Borne Disease Surveillance Coordinator

Bureau of Epidemiology

Division of Disease Control and Health Protection

Conflicts of Interest

We have no conflicts of interest to disclose.

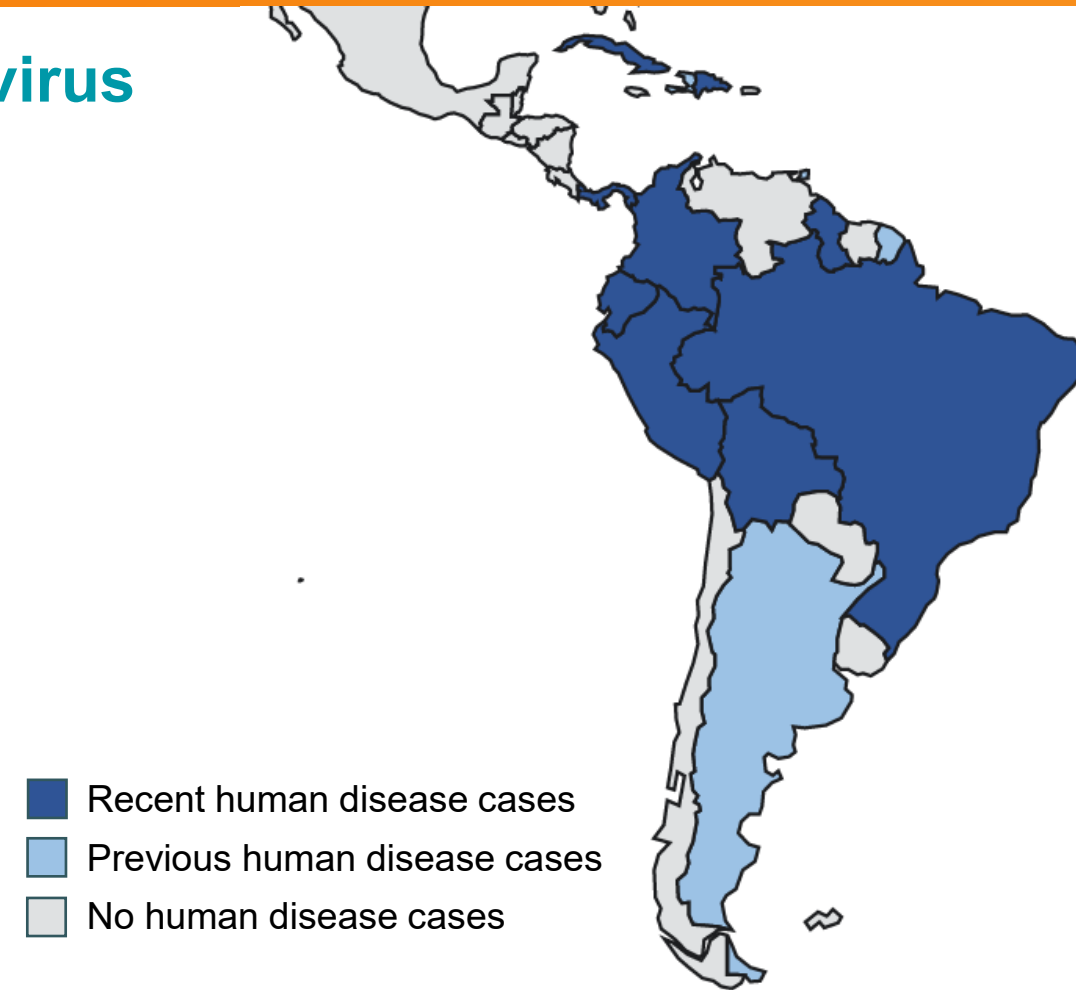
Emerging Arbovirus

Oropouche Virus (OROV) is an Orthobunyavirus

- First identified in Trinidad in 1955
- Most outbreaks in Amazon region
- Second most common arbovirus in Brazil

During 2024:

- >16,000 cases in the Americas
- Identification of human cases in new countries:
 - Barbados
 - Cuba
 - Dominican Republic
 - Guyana



Something Feels Familiar...



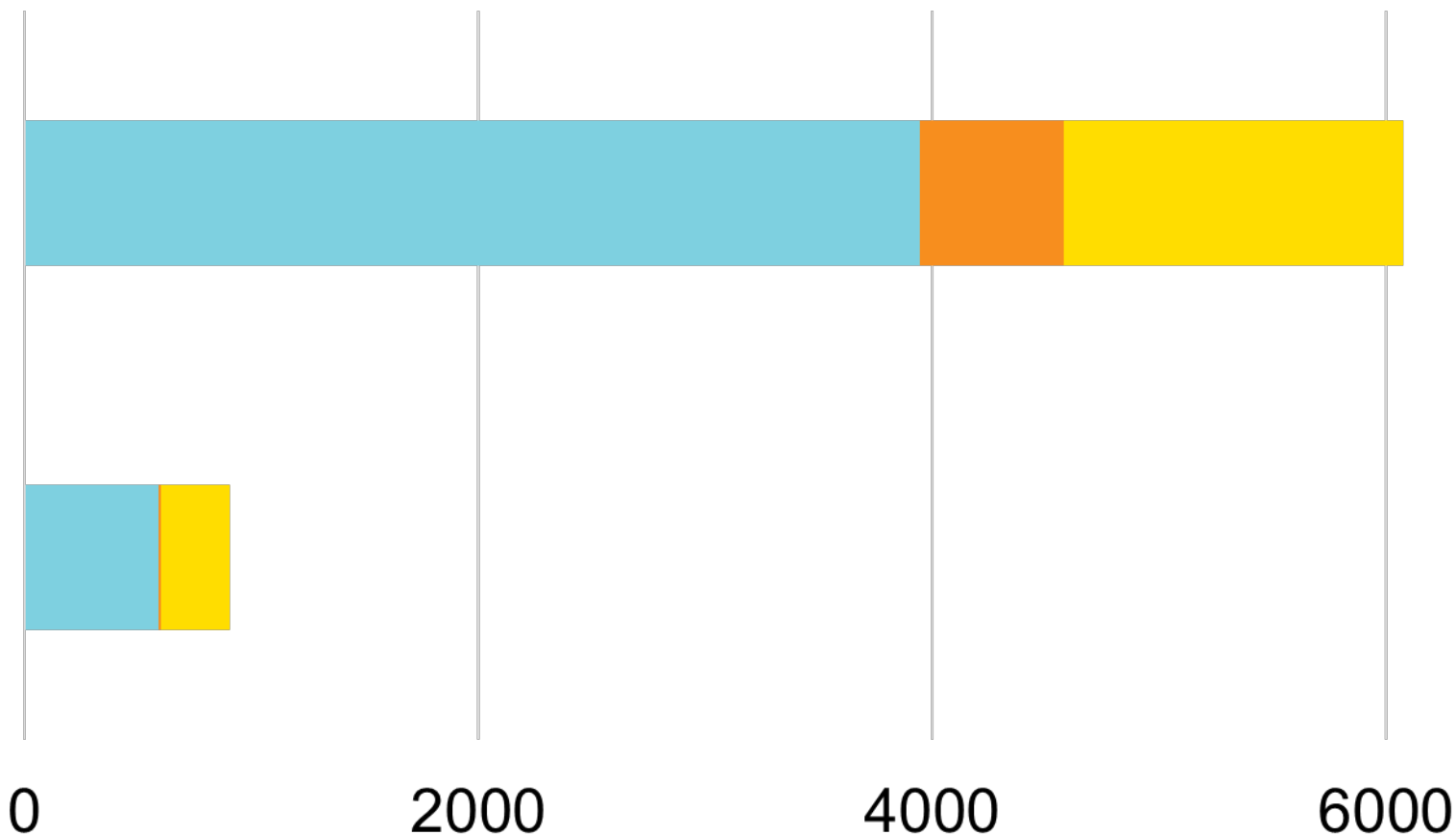
...We've Been Here Before



Travel-Associated

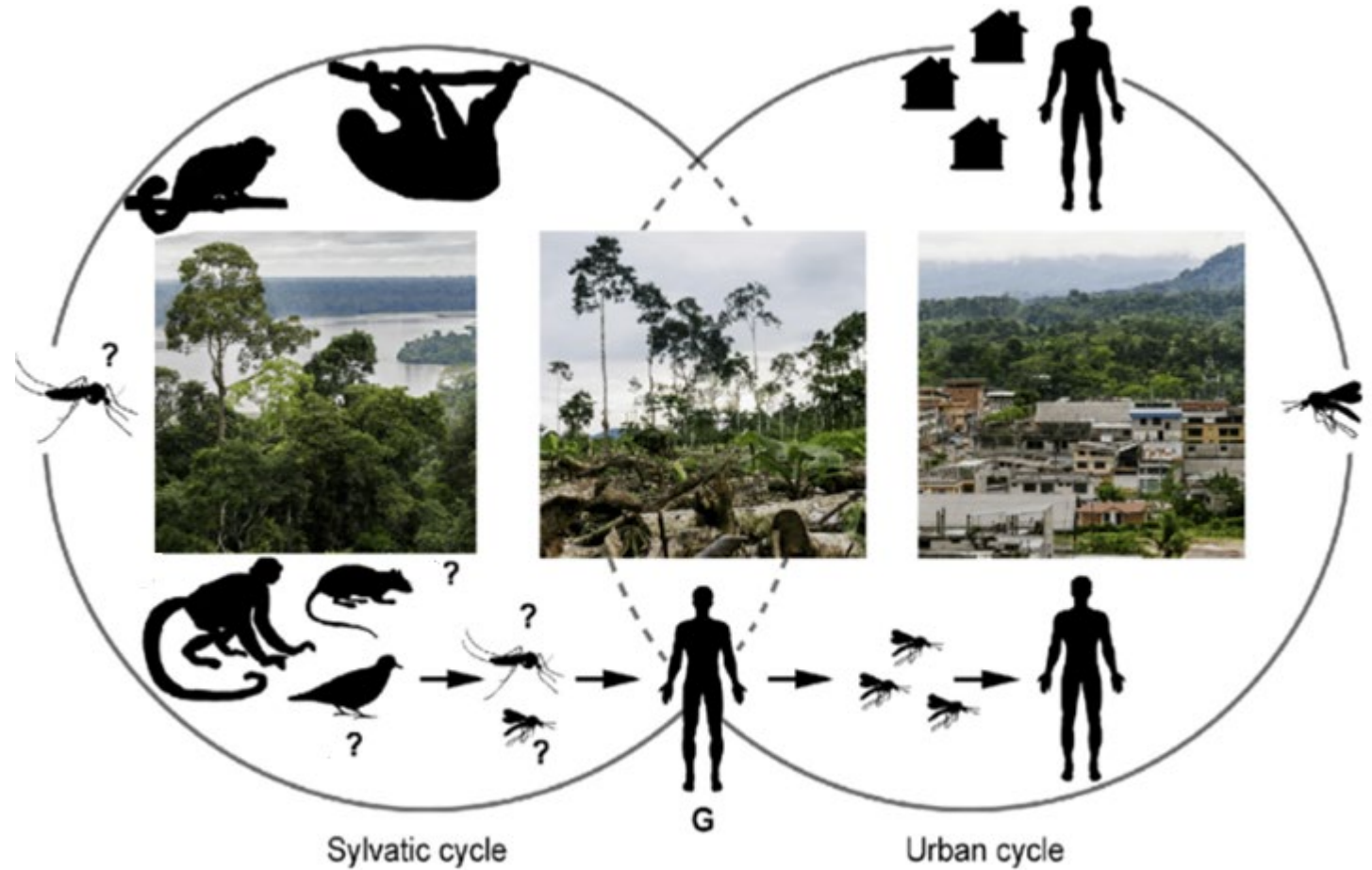


Locally Acquired

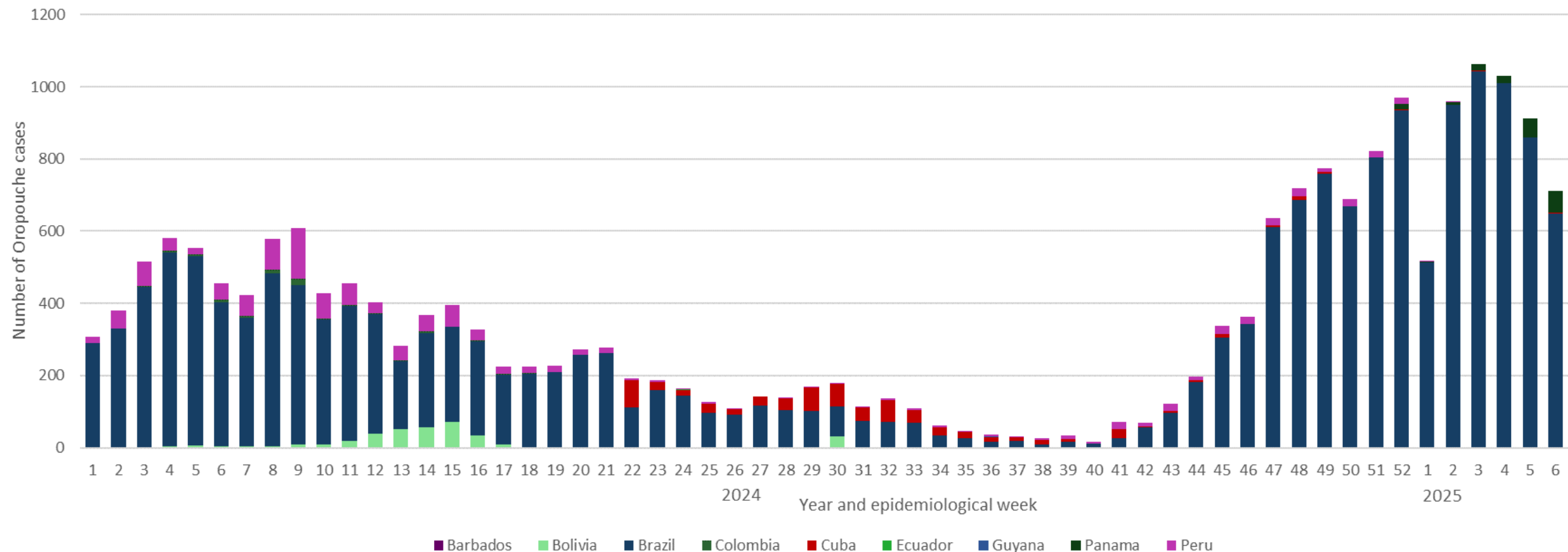


Dengue Chikungunya Zika

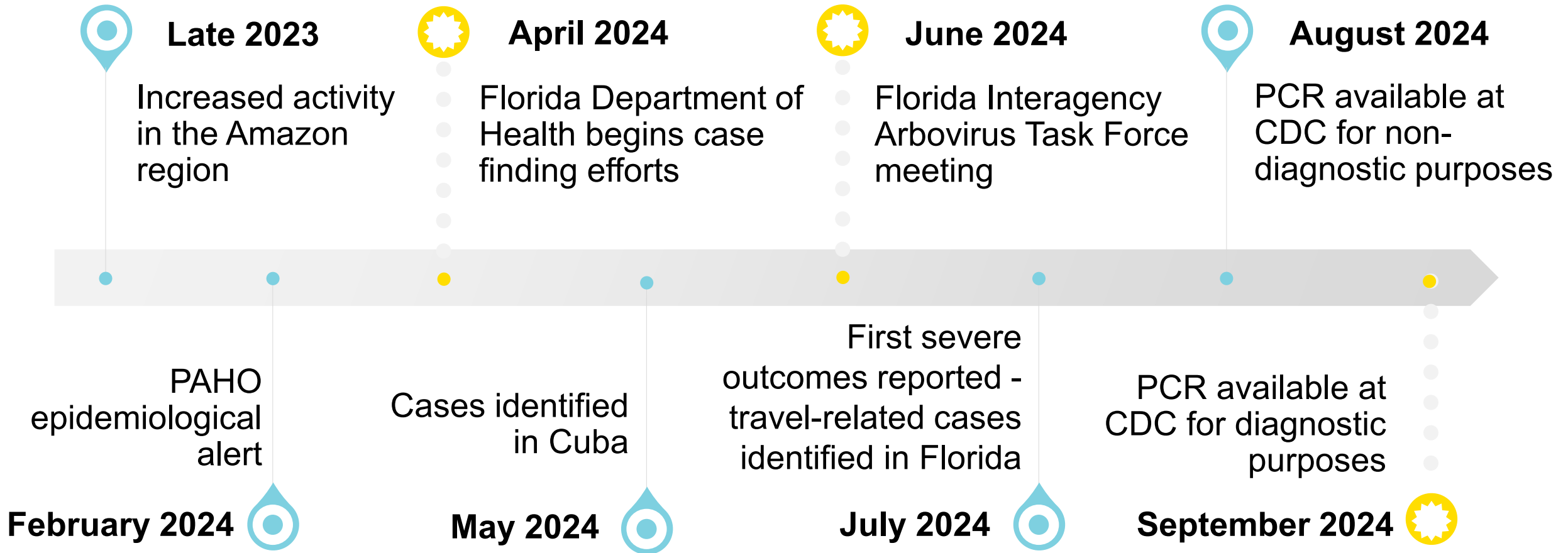
...With an Added Twist!



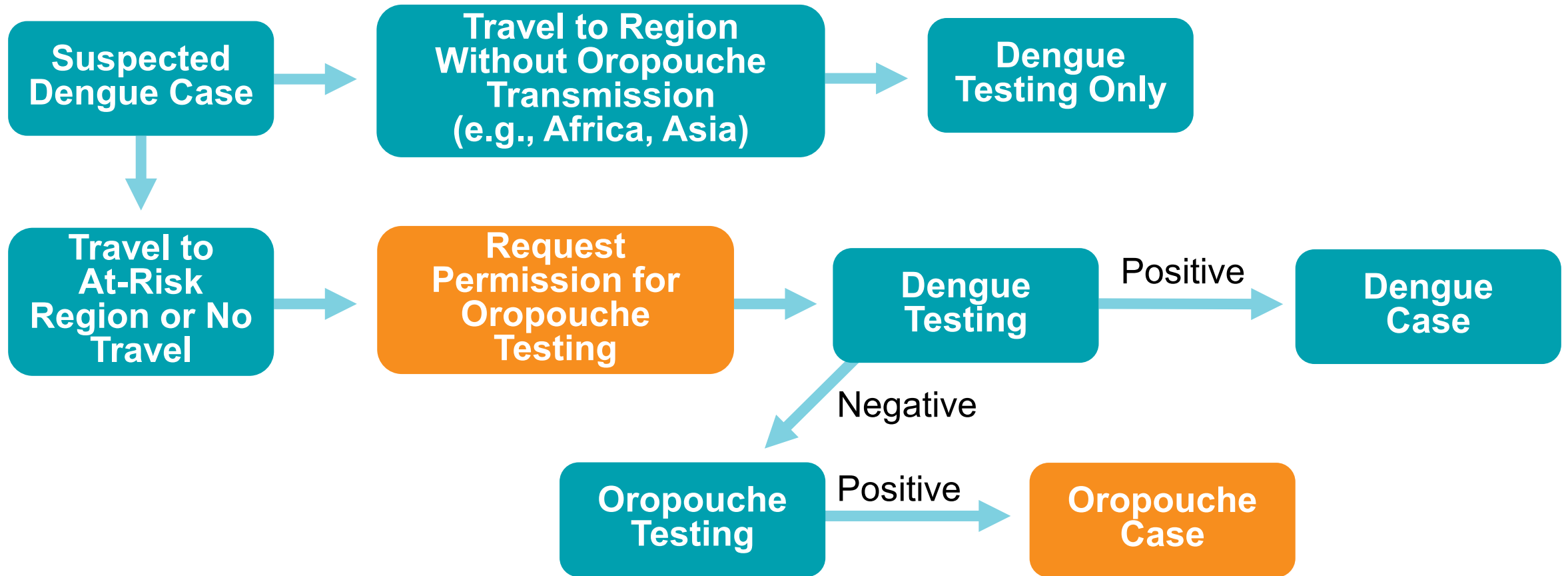
Oropouche Cases by Country, 2024-2025*



Timeline



Initial Testing Algorithm



OROV Approach to Test Implementation

Should we implement testing in-house? Molecular or serology?

- What is the window of viremia for PCR?
- Are patients symptomatic that PCR would be ordered?
- Are IgG and/or IgM assays useful? In what time frame?
- Is there cross-reactivity with other viruses? Do we need PRNT?

510 *Mem Inst Oswaldo Cruz, Rio de Janeiro, Vol. 112(7): 510-513, July 2017*

Multiplexed reverse transcription real-time polymerase chain reaction for simultaneous detection of Mayaro, Oropouche, and Oropouche-like viruses

Felipe Gomes Naveca^{1/+}, Valdinete Alves do Nascimento¹,
Victor Costa de Souza¹, Bruno Tardelli Diniz Nunes²,
Daniela Sueli Guerreiro Rodrigues², Pedro Fernando da Costa Vasconcelos^{2,3}

Current OROV Diagnostic Testing Landscape

Molecular Testing — RT-PCR

- Available at CDC and a few state public health laboratories
- Perform testing within seven days of symptom onset
- Specimen types: serum, cerebrospinal fluid (CSF)
- High throughput PCR testing in development — Hologic Panther Fusion

Plaque Reduction Neutralization Testing (PRNT)

- Detection of neutralizing antibodies specific to OROV
- Available at CDC and in development at public health laboratories

Antibody Testing

- Enzyme-linked immunosorbent assay (ELISA) in development

Challenges with OROV Diagnostics

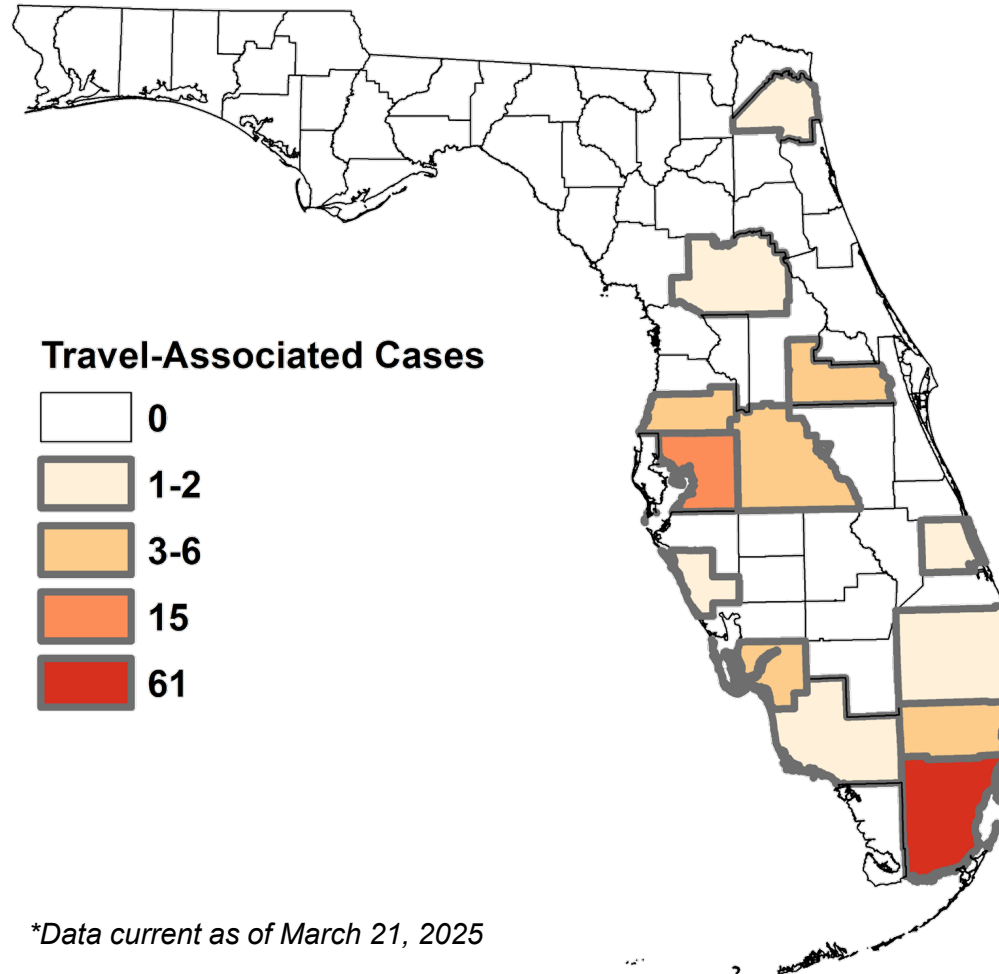
Implementation of a Laboratory Developed Test (LDT)

- Florida Department of Health, Bureau of Public Health Laboratories is performing this LDT under the enforcement discretion provided for assays needed for “immediate response.”

Availability of Validation Materials

- Limited availability of positive specimens (using cultured virus)
- Determining sensitivity and specificity

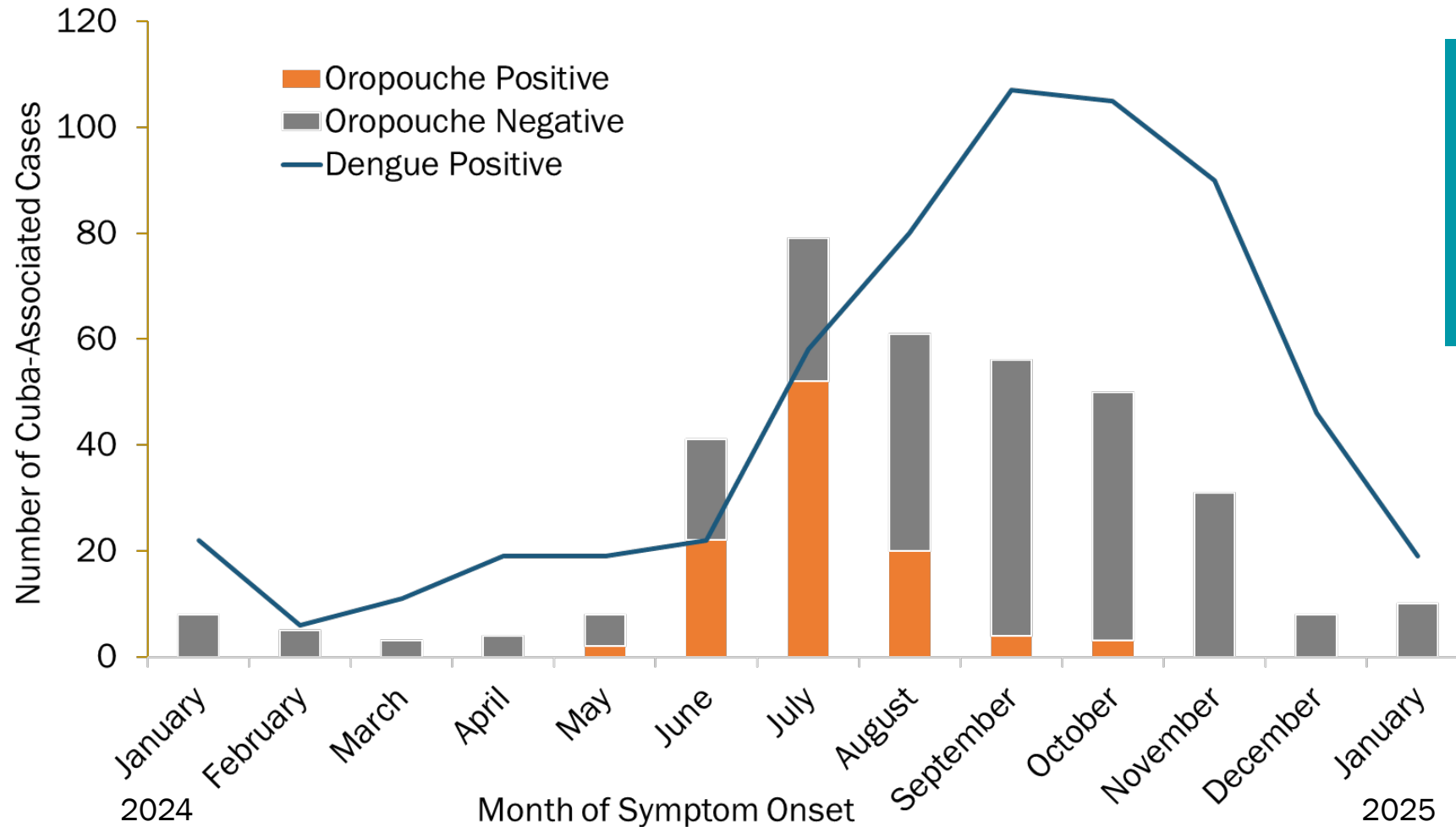
OROV Activity, 2024*



103 Cases with Travel to Cuba

- Most were visiting friends and relatives.
- At least 32 cases had intermittent or relapsing symptoms.
- 61% were positive by PCR.

28% of Cuban Traveler Samples were Positive*



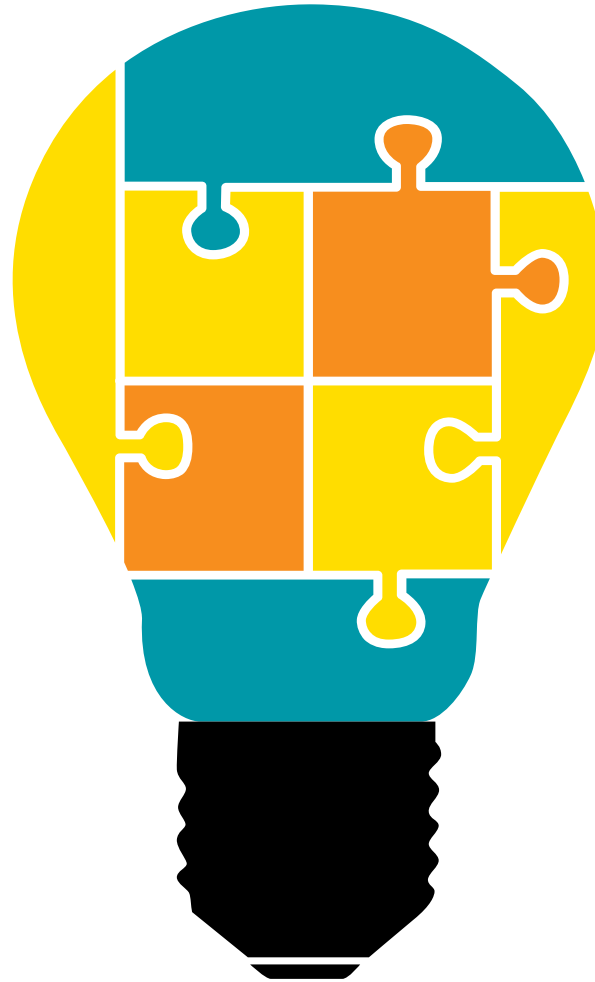
Five possible co-infections or recent exposures to both OROV and DENV

Use Lessons Learned from Past Responses

Close
coordination and
early planning



Surge plans and
triage strategies



Establish and
maintain outside
partnerships



Think outside
the box



Laboratory Preparedness

Emerging Infectious Diseases: Requires Technical Expertise

- CDC's Laboratory Response Network assays
- LDT assay development
- Instrumentation - extraction (MP, QIAcube, etc.), amplification (ABI 7500)
- High throughput platforms - working with industry

Ability to Surge Test: Requires Resources

- Staffing
- Ability to move to high throughput testing when needed
- Working with commercial/clinical labs

Maintaining a Warm Base: Requires Resources, Partnership

Conclusions

Benefits

- Close coordination with internal and external partners.
- Ability to pivot current enhanced surveillance activities for Oropouche case finding.

Barriers

- Low health care provider recognition.
- No commercial testing available.
- Prolonged assay development and validation.
 - Initial PCR testing for public health surveillance purposes only.
 - Not all samples meeting testing criteria were tested due to the need for patient or health care facility approval.

Contact Information



Marie-Claire Rowlinson, PhD, D(ABMM)

Bureau of Public Health Laboratories
Division of Disease Control and Health Protection
Marie-Claire.Rowlinson@FLhealth.gov



Andrea Morrison, PhD

Bureau of Epidemiology
Division of Disease Control and Health Protection
Andrea.Morrison@FLhealth.gov

