

# Zika and Chikungunya in the Americas

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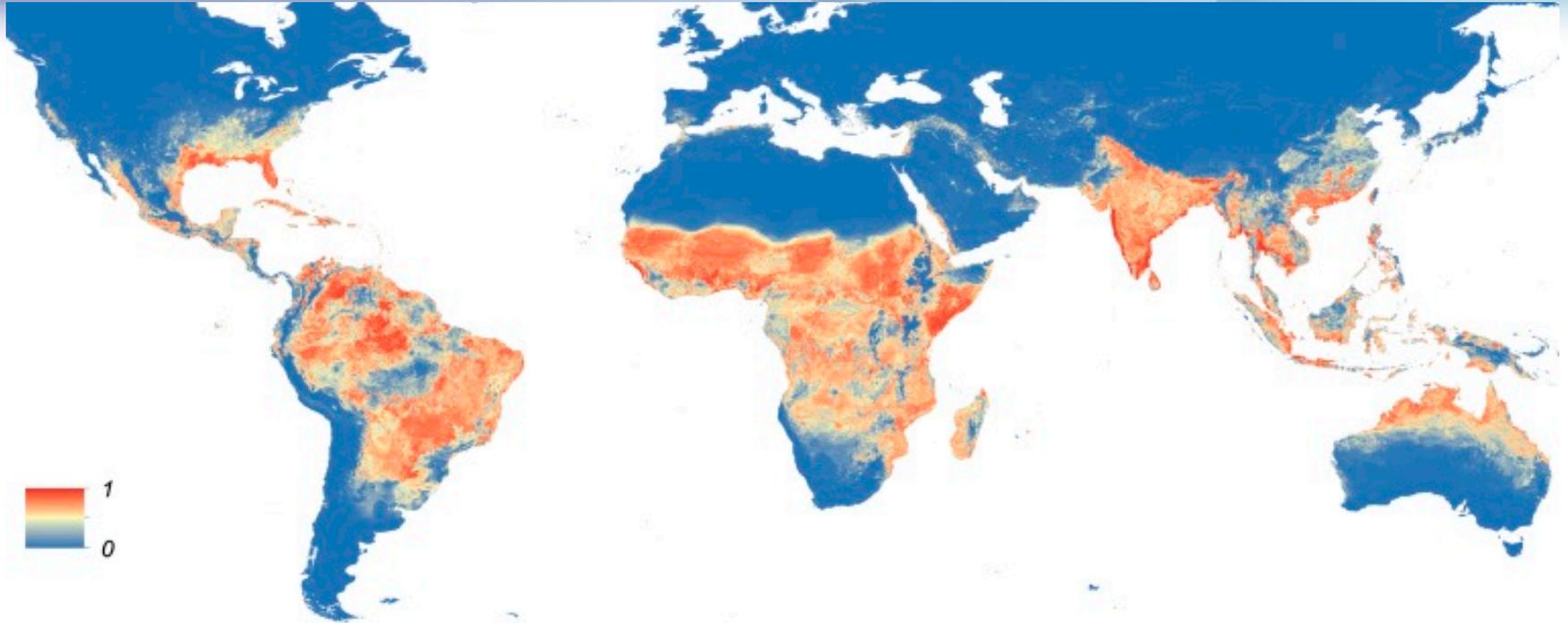
Neglected, Tropical and Vector-Borne Diseases Unit

Communicable Diseases and Environmental Determinants of Health Department

Pan American Health Organization

May 23, 2018

# Predicted Presence of *Ae aegypti* mosquito



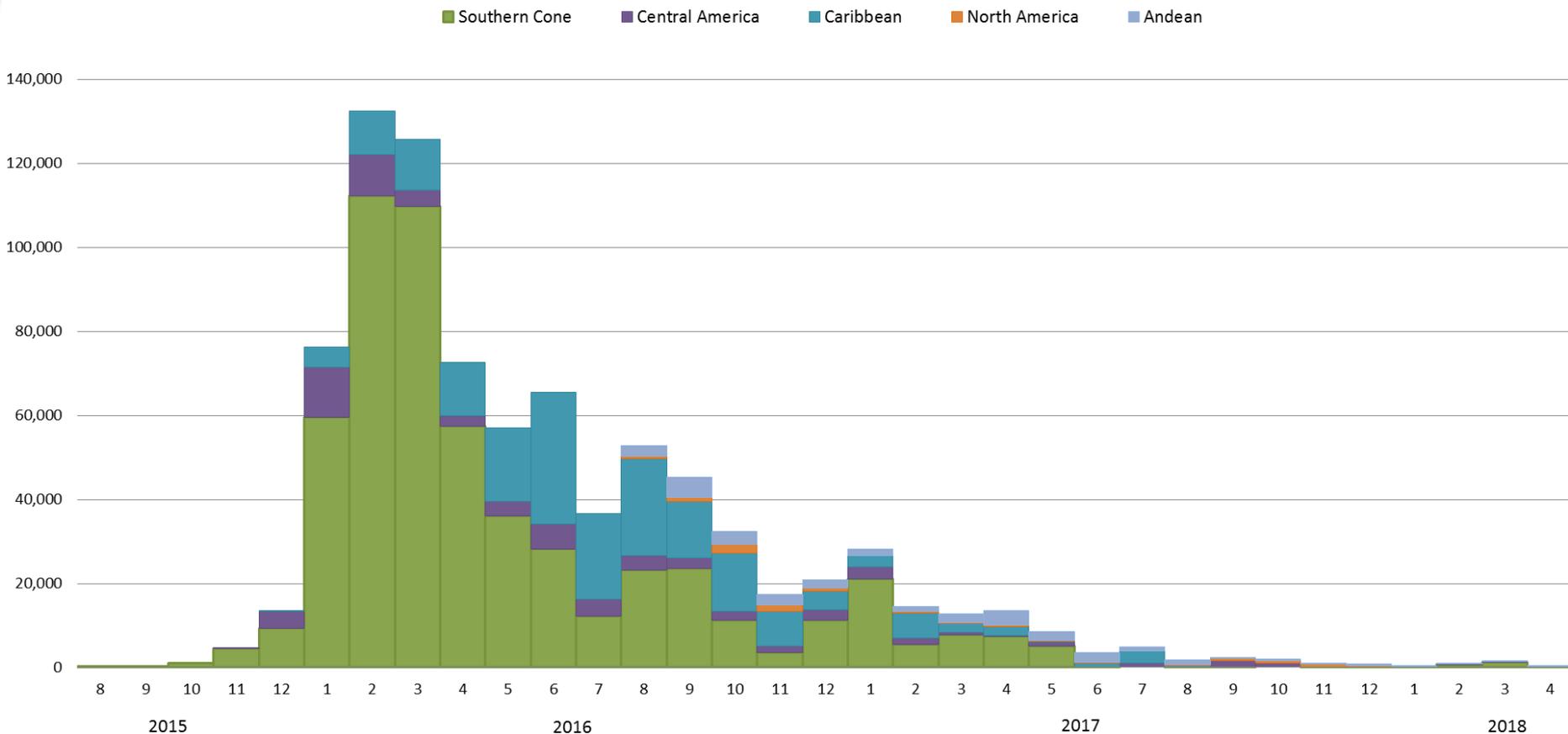
Kraemer MU, Sinka ME, Duda KA, et al. The global distribution of the arbovirus vectors *Aedes aegypti* and *Ae. albopictus*. Jit M, ed. *eLife*. 2015;4:e08347. doi:10.7554/eLife.08347.



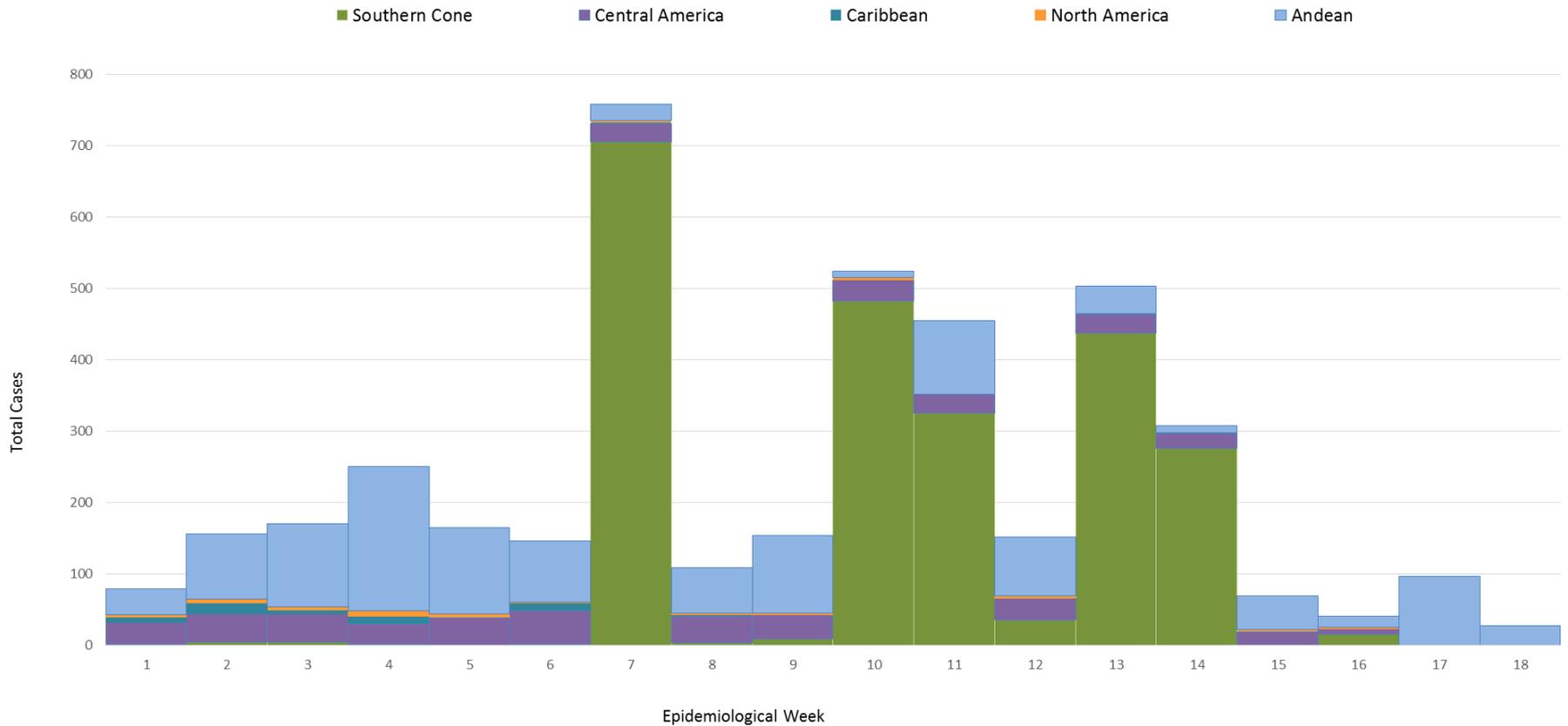
# Zika Virus

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# Monthly Zika cases Reported to PAHO by Sub-Region August 2015- April 2018



# Zika Cases Reported to PAHO in 2018, By Sub-Region and Epidemiological Week



# Zika Transmission in 2018 – Countries in LAC reporting the greatest Case burden

| Country    | Suspected | Confirmed | Total | Cumulative incidence (per 100,000 pop) |
|------------|-----------|-----------|-------|--|
| Brazil     | 1557      | 677       | 2234  | 1.07                                   |
| Peru       | 875       | N/A       | 875   | 2.74                                   |
| Bolivia    | 516       | 213       | 729   | 6.64                                   |
| Colombia   | 128       | 271       | 399   | 0.82                                   |
| Costa Rica | 163       | 10        | 173   | 3.54                                   |

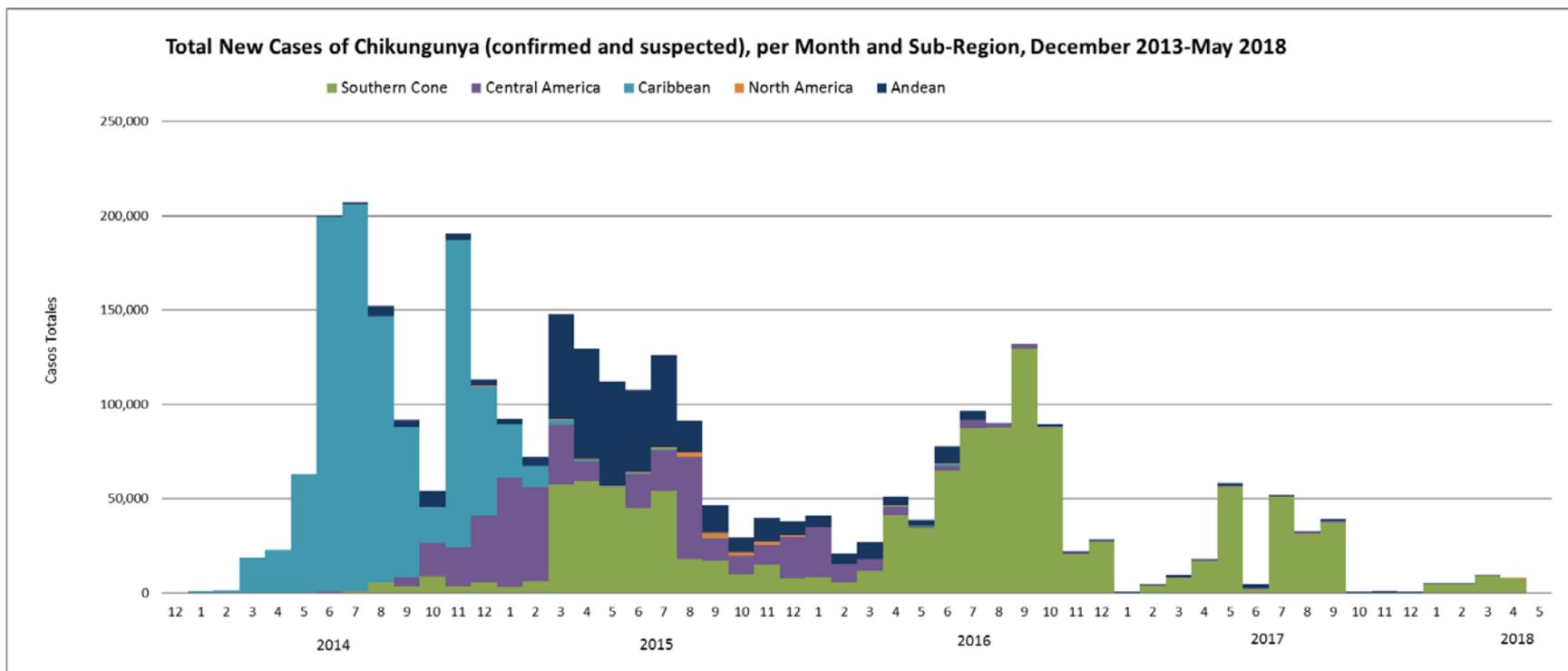
# Zika Cumulative Incidence (CI) by Sub-region (per 100,000 pop) EW 1-17 for 2016, 2017, and 2018

| Sub-Region      | EW 1-17, 2016 | EW 1-17, 2017 | EW 1-17, 2018 |
|-----------------|---------------|---------------|---------------|
| South America   | 80.40         | 6.13          | 0.84          |
| Central America | 60.86         | 6.71          | 1.04          |
| Caribbean       | 90.25         | 18.88         | 0.11          |

# Chikungunya Virus

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# Monthly Chikungunya cases Reported to PAHO by Sub-Region December 2013- April 2018



Título de la presentación



# Chikungunya Transmission in 2018 – Countries in LAC reporting the greatest Case burden

| Country   | Suspected | Confirmed | Total  | Cumulative Incidence (per 100,000 pop) |
|-----------|-----------|-----------|--------|--|
| Brazil    | 10,791    | 15,684    | 26,475 | 12.53                                  |
| Colombia  | 6         | 220       | 226    | 0.46                                   |
| Peru      | 216       | N/A       | 216    | 0.67                                   |
| Bolivia   | 116       | 34        | 150    | 1.36                                   |
| Nicaragua | 96        | 21        | 117    | 1.88                                   |

# New Challenges



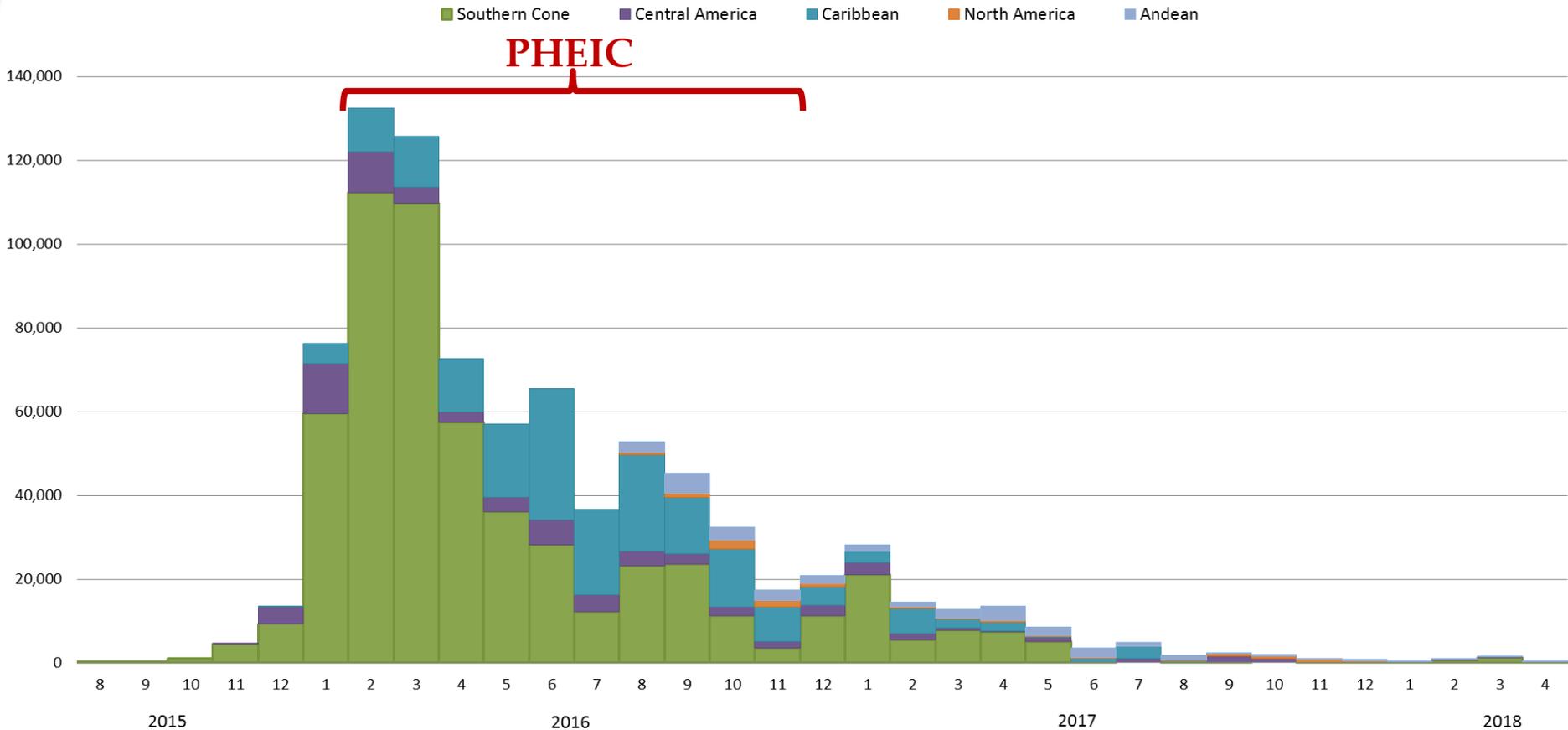
Pan American  
Health  
Organization



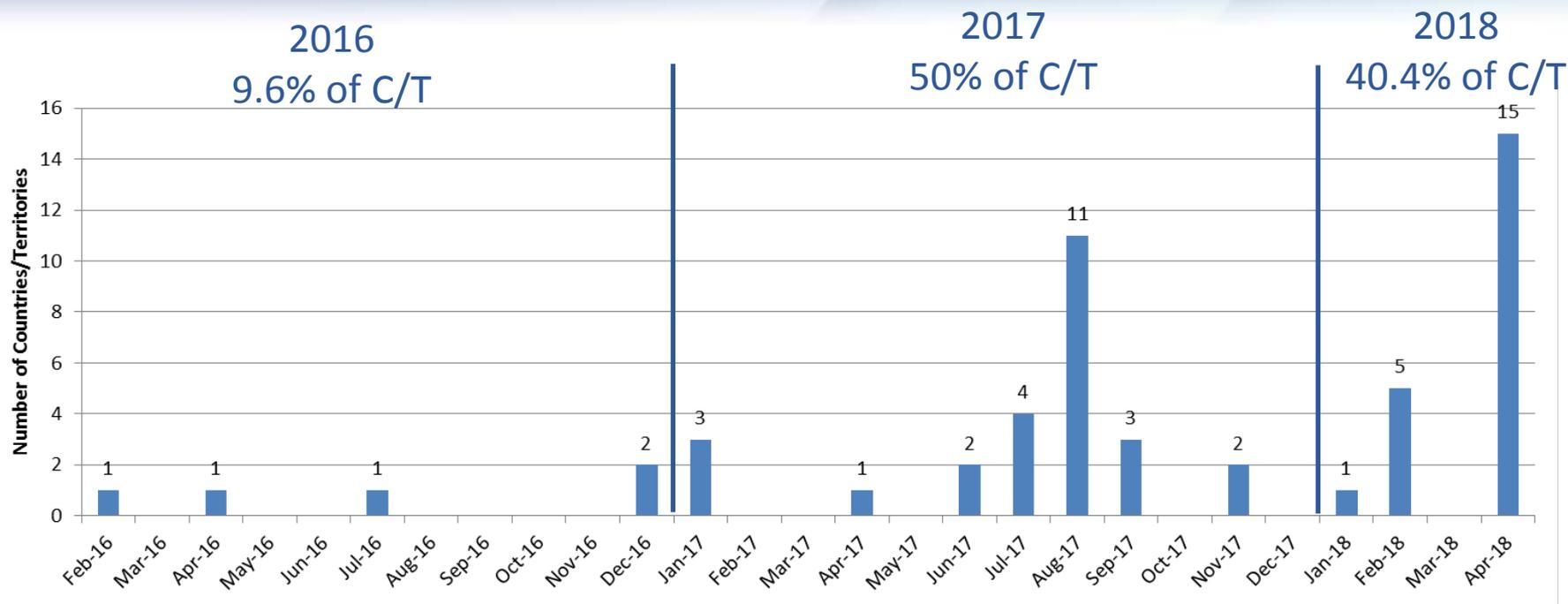
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# Challenges with Zika Reporting: Reporting beyond the Public Health Emergency of International Concern



# Challenges with Zika Reporting: Date of Countries/Territories last Report



# Challenges with Zika Reporting: Type of Report in 2018

| Type of Report                | Number of Countries / Territories |
|-------------------------------|-----------------------------------|
| Suspected and Confirmed cases | 14                                |
| Suspected cases only          | 4                                 |
| Confirmed cases only          | 4                                 |
| No data in 2018               | 30                                |

# Zika and Neurological Manifestations



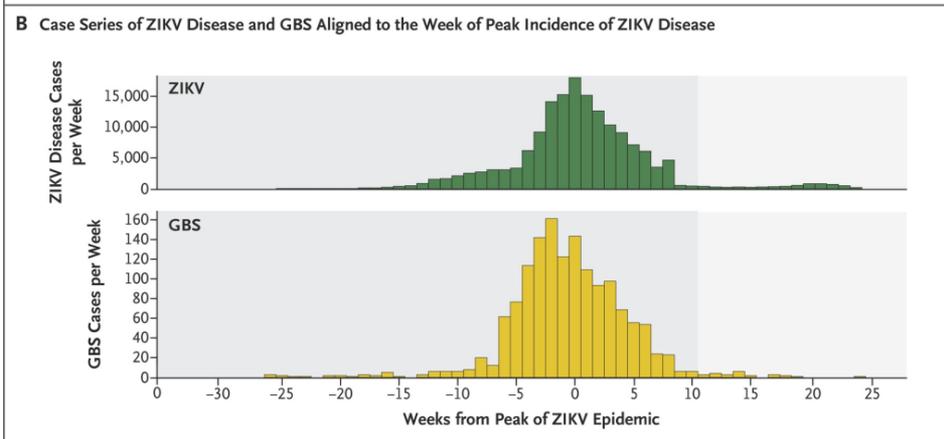
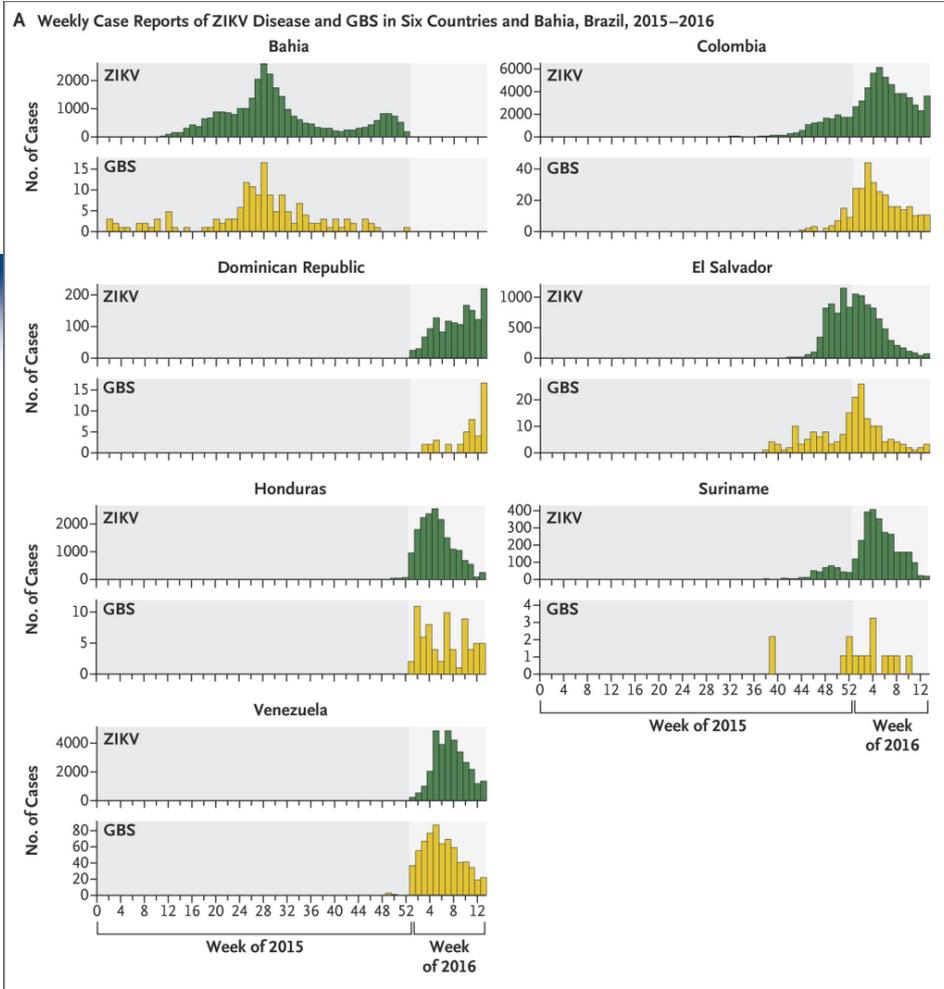
**Congenital Zika Syndrome**



**GBS and other neurological complications**

# Cases of Congenital Zika Syndrome Reported to PAHO, by Sub-Region and year

| Sub-Region      | 2015-2016 | 2017 | 2018 | Total |
|-----------------|-----------|------|------|-------|
| Southern Cone   | 2292      | 667  | 6    | 2965  |
| Andean          | 86        | 190  | 24   | 300   |
| Central America | 30        | 159  | 0    | 189   |
| North America   | 40        | 79   | 17   | 136   |
| Caribbean       | 77        | 95   | 0    | 172   |
| Total           | 2525      | 1190 | 47   | 3762  |



# Neurological Anomalies Guillain-Barre Syndrome

dos Santos, T. *et al.* Zika Virus and the Guillain-Barre Syndrome - Case Series from Seven Countries. *N. Engl. J. Med.* **375**, 1598–1601 (2016).

# Chikungunya and Persistent Rheumatic Disorders



# Chikungunya-Associated Severe Outcomes

**>2.5 Million Cases  
of Chikungunya  
Reported to PAHO**



**Death and  
Persistent  
Rheumatic  
Disorders**



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Organization**



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**Americas**

# Current epidemiological profile of arboviral diseases

- Chikungunya caused explosive, time-limited transmission in the Caribbean islands, but has persisted longer in continental land mass
- Zika caused major epidemics in most countries but transmission has slowed down
- Reduced transmission of dengue fever post Zika
- Resurgence of yellow fever
- Surveillance systems need to adapt
  - Concerns over long-term sustainability
  - Optimizing use of resources in light of waning interest

# Defining the way forward

- Assess the feasibility of integrating surveillance of arboviruses – would it be more sustainable to integrate into existing Measles and Rubella systems for surveillance of rash?
- Maximize existing data sources to quantify burden of severe outcomes like neurological anomalies, birth defects, and persistent rheumatic disorders
- Adopt innovative approaches such as modeling to shed light on uncertainties
- Promote continued information sharing, even in light of waning interest

**Thank you**  
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