



# **What do appropriations have to do with Zika?**

**Debra Lubar, PhD**

**Director, Office of Appropriations**

**Centers for Disease Control and Prevention**

# CDC Overview

# CDC: THE NATION'S HEALTH PROTECTION AGENCY

- Founded in 1946
- Part of US Department of Health and Human Services
- Headquartered in Atlanta
- 12,000+ full-time employees
  - 60% with advanced degrees



**CDC works 24/7 to save lives and protect Americans from health, safety, and security threats ... man-made and naturally occurring ... infectious and non-infectious... from the US and from anywhere in the world**



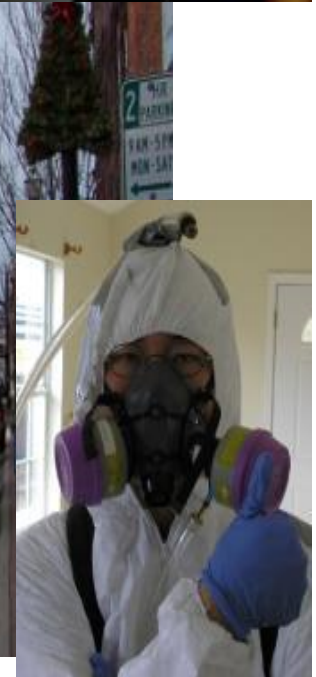


# PUTTING SCIENCE INTO ACTION



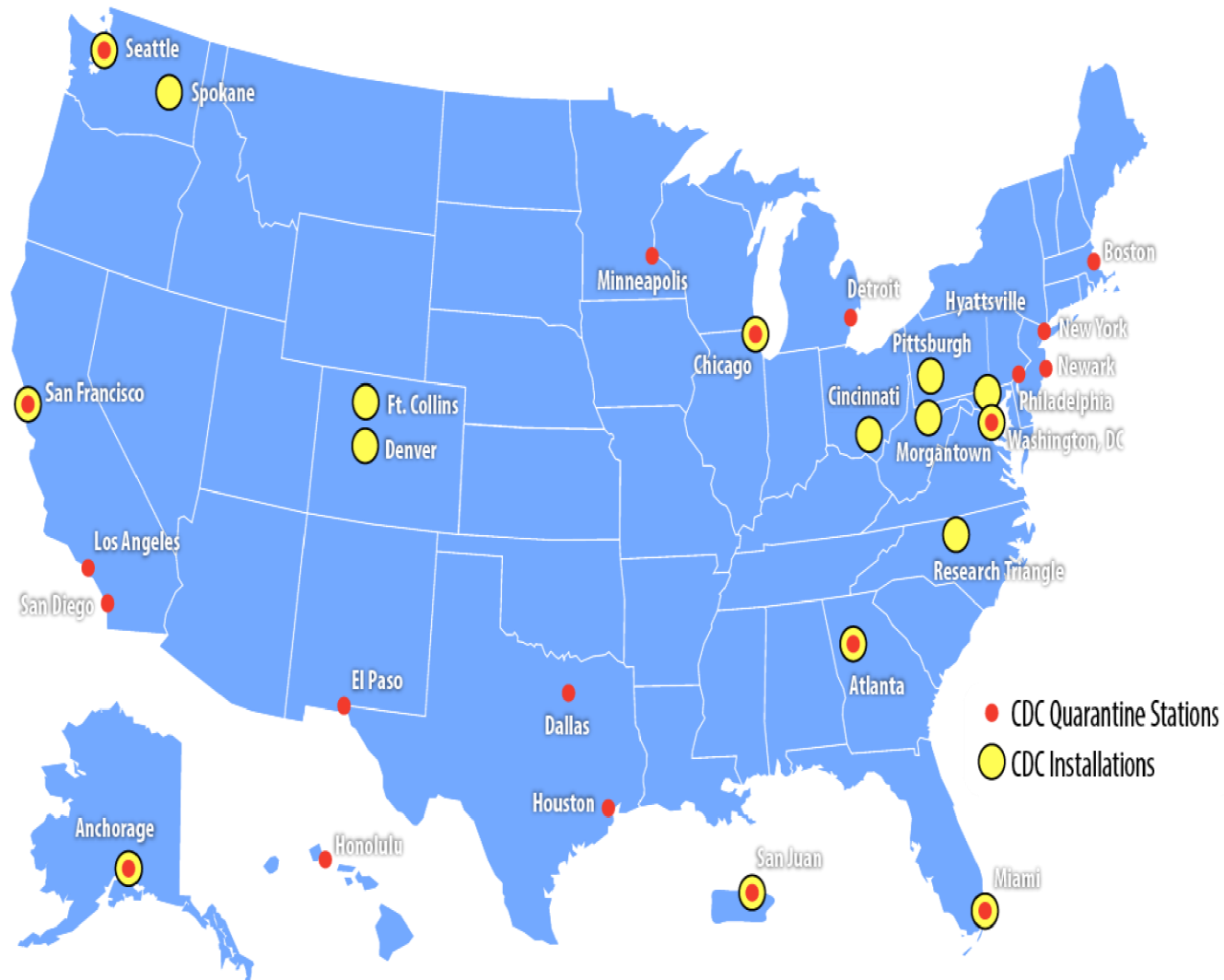
*CDC turns science into real-world solutions  
to protect people and improve health*

# PROTECTING PEOPLE AROUND THE COUNTRY



*Most of CDC's funding goes to state & local entities, providing them with resources and support to protect Americans from health threats*

# CDC HAS RESEARCH, DETECTION, AND RESPONSE UNITS AROUND THECountry

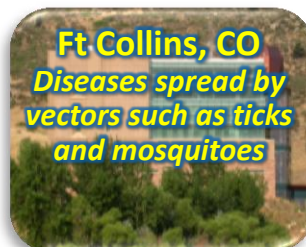




# CDC LABORATORIES DO CUTTING EDGE SCIENCE TO KEEP AMERICANS SAFE FROM THREATS



**Spokane, WA**  
*Workplace safety engineering*



**Ft. Collins, CO**  
*Diseases spread by vectors such as ticks and mosquitoes*



**Cincinnati, OH**  
*Worker safety and health*



**Pittsburgh, PA**  
*Mining safety*



**Morgantown, WV**  
*Lung health and other key worker safety and health*



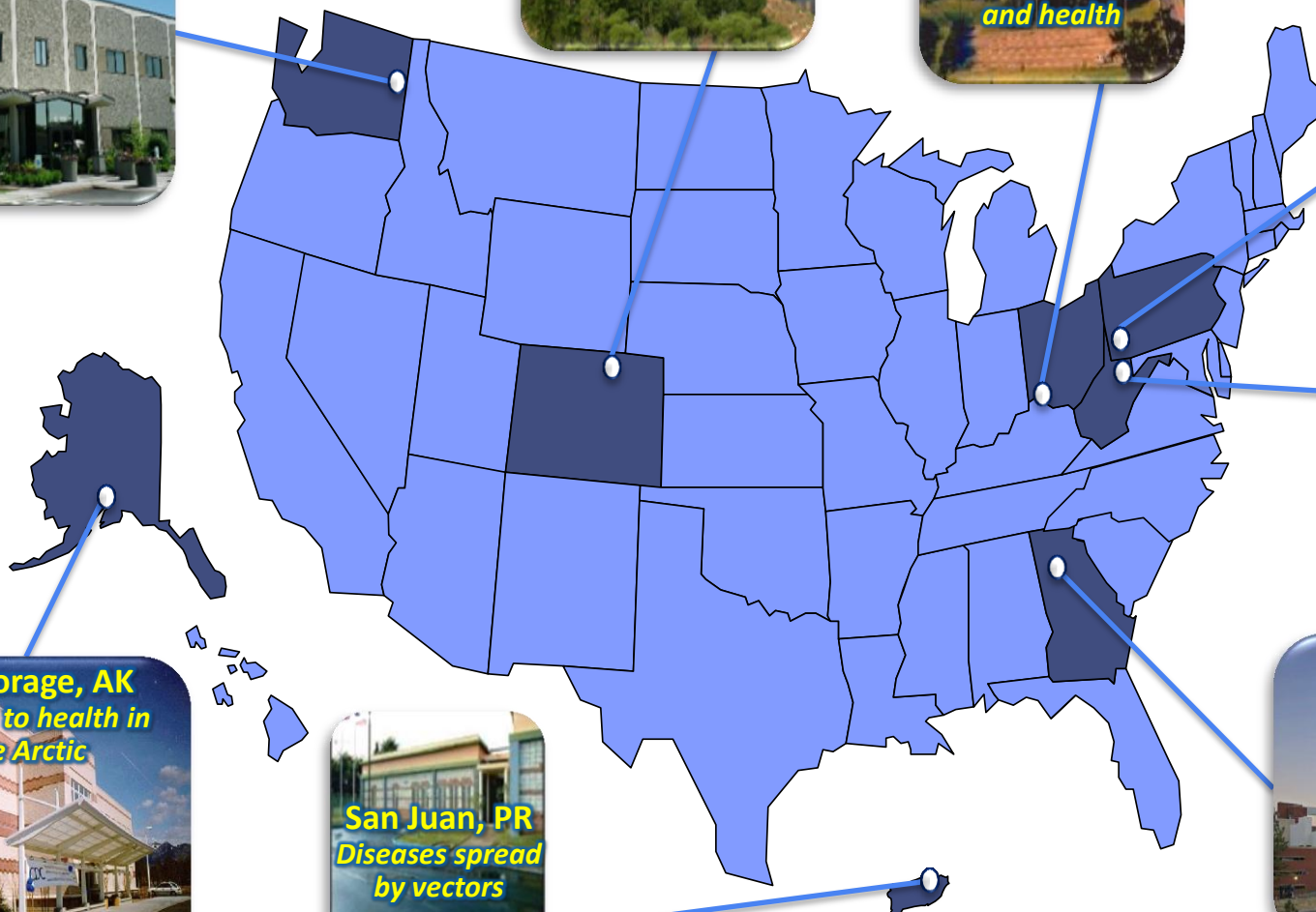
**Atlanta, GA**  
*Hundreds of pathogens and toxins*



**San Juan, PR**  
*Diseases spread by vectors*

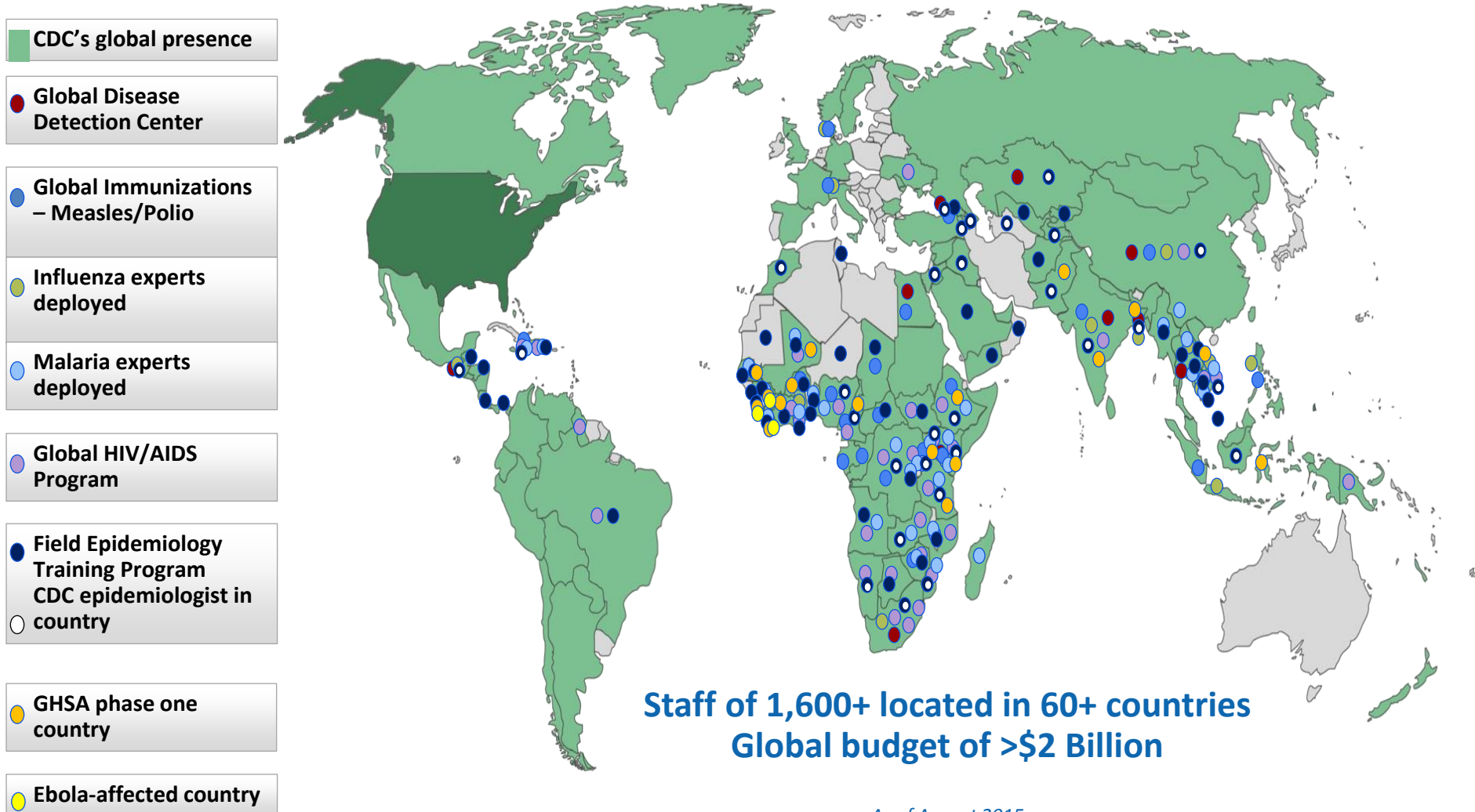


**Anchorage, AK**  
*Threats to health in the Arctic*





# CDC DOCTORS, NURSES, AND DISEASE CONTROL EXPERTS WORK AROUND THE WORLD TO KEEP AMERICANS SAFE



# CDC TOTAL FUNDING BUDGET PROPOSAL FOR FY 2017

	FY 2016	FY 2017 PB	FY 2017 +/- FY 2016
<b>CDC Program Level</b> <i>Dollars rounded to nearest million</i>	<b>\$7,178M</b>	<b>\$6,984M</b>	<b>-\$194M</b>
<b>ATSDR</b>	<b>\$75M</b>	<b>\$75M</b>	<b>+\$0M</b>
<b>Total Mandatory Funding</b>	<b>\$4,528M</b>	<b>\$4,809M</b>	<b>+\$281M</b>
<i>Childhood Obesity</i>	<i>\$10M</i>	<i>\$0M</i>	<i>-\$10M</i>
<i>VFC</i>	<i>\$4,161M</i>	<i>\$4,387M</i>	<i>+\$226M</i>
<i>EEOICPA</i>	<i>\$55M</i>	<i>\$55M</i>	<i>+\$0M</i>
<i>WTCHP</i>	<i>\$300M</i>	<i>\$335M</i>	<i>+\$35M</i>
<i>Behavioral Health</i>	<i>\$0M</i>	<i>\$30M</i>	<i>+\$30M</i>
<i>User Fees</i>	<i>\$2M</i>	<i>\$2M</i>	<i>+\$0M</i>
<b>CDC Total Funding</b>	<b>\$11,781M</b>	<b>\$11,868M</b>	<b>+\$87M</b>

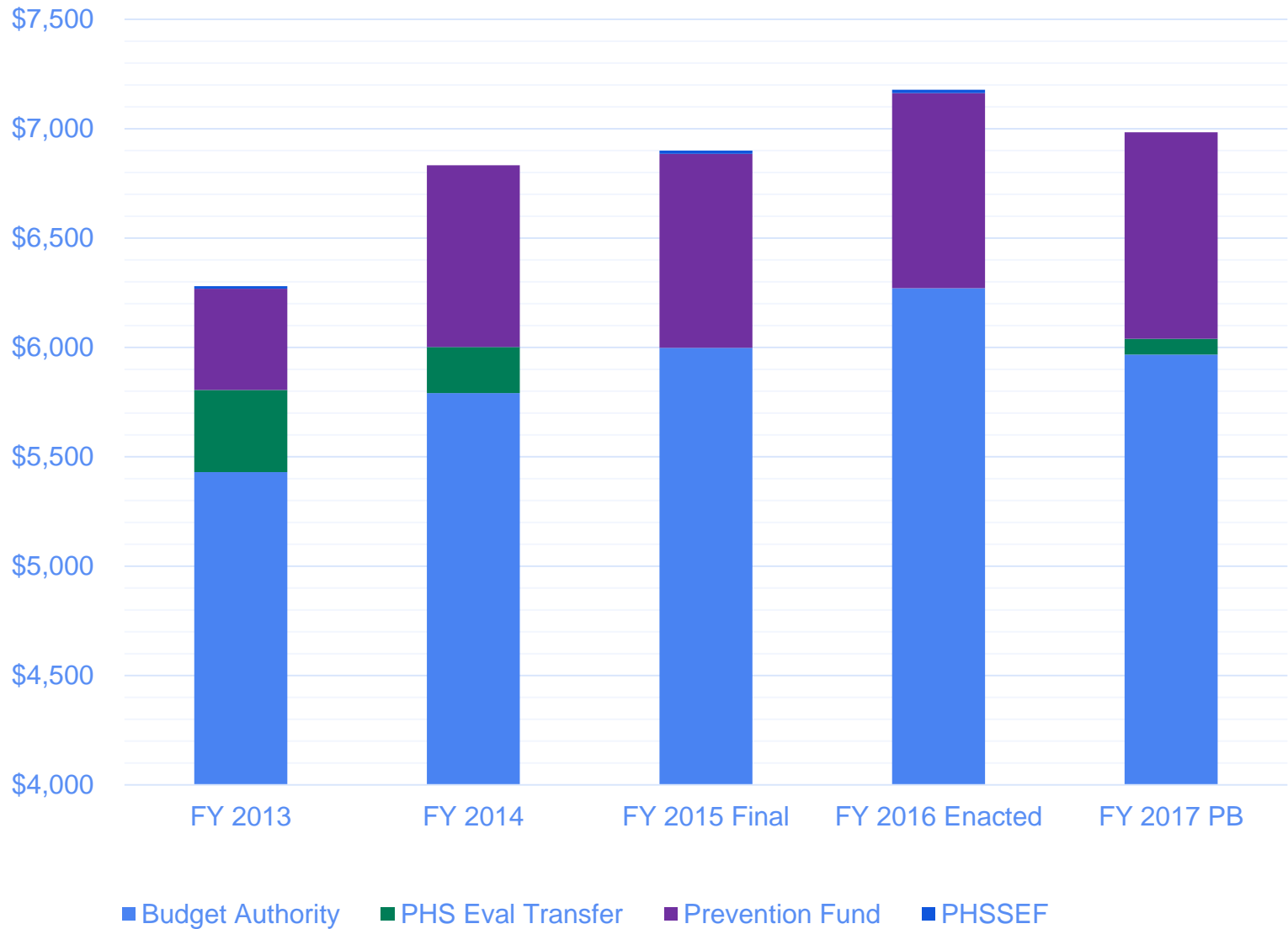
# CDC PROGRAM LEVEL BUDGET PROPOSAL FOR FY 2017

- Overall decrease of \$194 million
- Continued focus on CDC priorities: Antibiotic Resistance, Prescription Drug Overdose, Global Health, Lab Safety & Science
- New priorities: Indian Country, Laboratory and other facilities

<i>Dollars rounded to nearest million</i>	FY 2016	FY 2017 PB	FY 2017 +/- FY 2016
<b>Budget Authority</b>	<b>\$6,271M</b>	<b>\$5,967M</b>	<b>-\$304M</b>
<b>Prevention Fund</b>	<b>\$892M</b>	<b>\$945M</b>	<b>+\$53M</b>
<b>PHS Evaluation</b>	<b>\$0M</b>	<b>\$72M</b>	<b>+\$72M</b>
<b>PHSSEF</b>	<b>\$15M</b>	<b>\$0M</b>	<b>-\$15M</b>
<b>CDC Program Level Total</b>	<b>\$7,178M</b>	<b>\$6,984M</b>	<b>-\$194M</b>

# CDC Program Level Funding

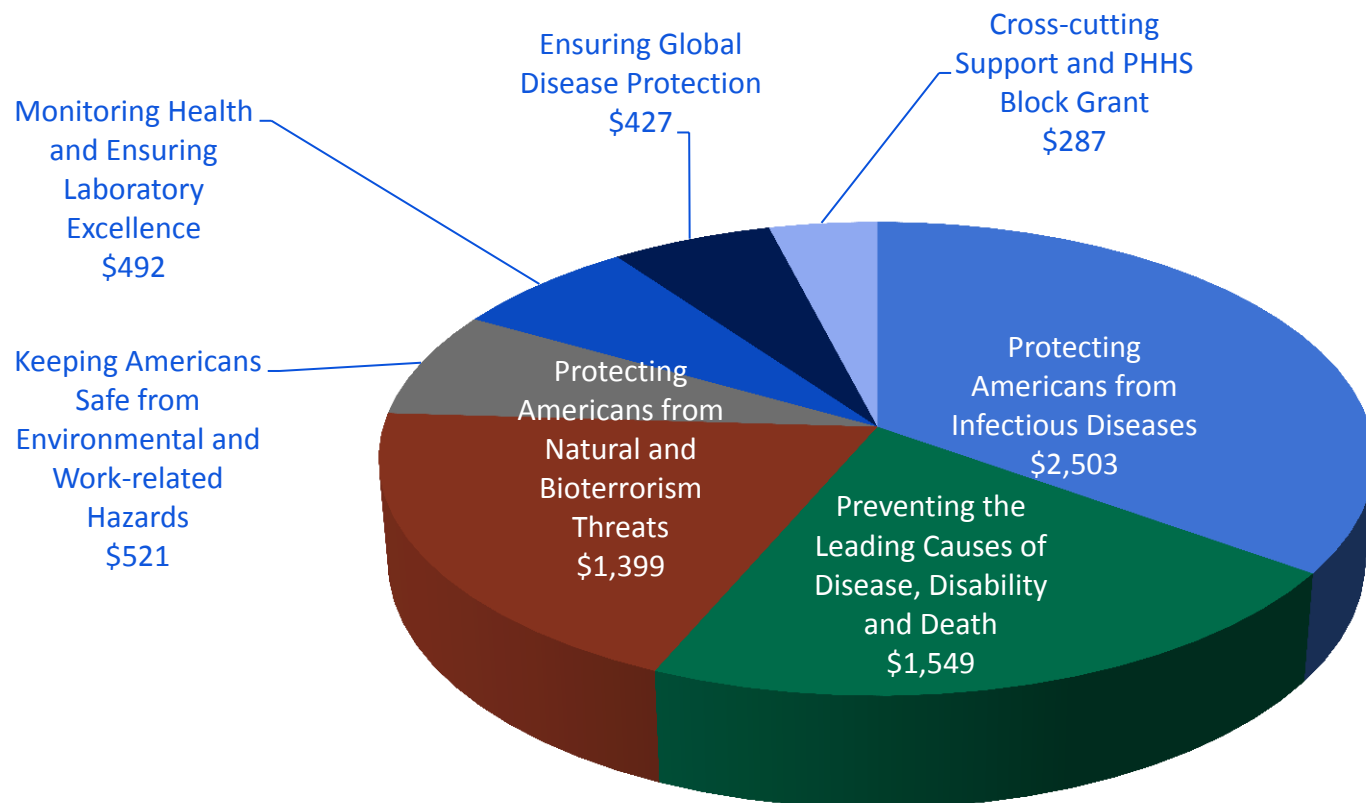
*Dollars in millions*





# CDC's Program Level in Fiscal Year 2016 (\$7.178 billion)

(dollars in millions)

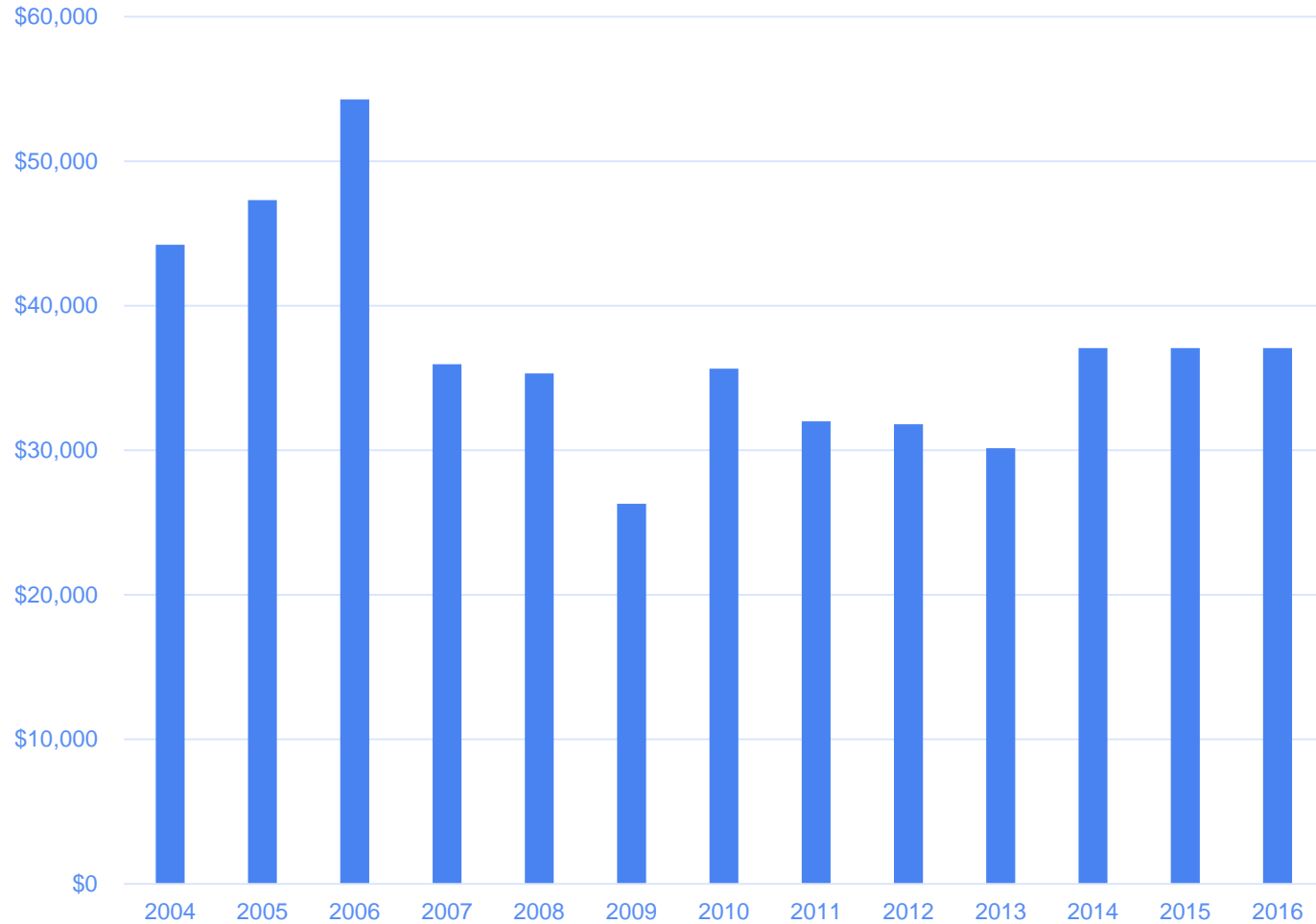


# CDC Budget Structure (It's complicated)

<b>Emerging and Zoonotic Infectious Diseases</b>	<b>\$404,990</b>	<b>\$527,885</b>	<b>\$52,000</b>	<b>\$579,885</b>	<b>\$174,895</b>
Emerging and Zoonotic Infectious Diseases - BA	\$352,990	\$527,885	\$0	\$527,885	\$174,895
Emerging and Zoonotic Infectious Diseases - PPHF	\$52,000	\$0	\$52,000	\$52,000	\$0
-- Antibiotic Resistance Initiative	N/A	\$160,000	\$0	\$160,000	\$160,000
-- Lab Safety and Quality	N/A	\$8,000	\$0	\$8,000	\$8,000
-- Emerging and Zoonotic Core Activities	\$29,840	\$29,840	\$0	\$29,840	\$0
-- Vector-borne Diseases	\$26,410	\$26,410	\$0	\$26,410	\$0
-- Lyme Disease	\$10,663	\$10,663	\$0	\$10,663	\$0
-- Prion Disease	\$5,850	\$6,000	\$0	\$6,000	\$150
-- Chronic Fatigue Syndrome	\$5,400	\$5,400	\$0	\$5,400	\$0
-- Emerging Infectious Diseases	\$147,230	\$147,000	\$0	\$147,000	(\$230)
-- Food Safety	\$47,993	\$52,000	\$0	\$52,000	\$4,007
-- National HealthCare Safety Network	\$18,032	\$21,000	\$0	\$21,000	\$2,968
-- Quarantine	\$31,572	\$31,572	\$0	\$31,572	\$0
-- Advanced Molecular Detection (AMD)	\$30,000	\$30,000	\$0	\$30,000	\$0
-- <i>Epi and Lab Capacity program (PPHF)</i>	<i>\$40,000</i>	<i>\$0</i>	<i>\$40,000</i>	<i>\$40,000</i>	<i>\$0</i>
-- <i>Healthcare-Associated Infections (PPHF)</i>	<i>\$12,000</i>	<i>\$0</i>	<i>\$12,000</i>	<i>\$12,000</i>	<i>\$0</i>
<b>Chronic Disease Prevention and Health Promotion</b>	<b>\$1,199,220</b>	<b>\$838,146</b>	<b>\$338,950</b>	<b>\$1,177,096</b>	<b>(\$22,124)</b>
Chronic Disease Prevention and Health Promotion - BA	\$747,220	\$838,146	\$0	\$838,146	\$90,926
Chronic Disease Prevention and Health Promotion - PPHF	\$452,000	\$0	\$338,950	\$338,950	(\$113,050)
-- Tobacco	\$105,492	\$84,000	\$0	\$84,000	(\$21,492)
-- <i>Tobacco (PPHF)</i>	<i>\$111,000</i>	<i>\$0</i>	<i>\$126,000</i>	<i>\$126,000</i>	<i>\$15,000</i>
-- Nutrition, Physical Activity and Obesity	\$12,585	\$49,920	\$0	\$49,920	\$37,335
-- High Obesity Rate Counties	\$7,500	\$10,000	\$0	\$10,000	\$2,500
-- All Other Nutrition, Physical Activity and Obesity	\$5,085	\$39,920	\$0	\$39,920	\$34,835
-- <i>Nutrition, Physical Activity and Obesity (PPHF)</i>	<i>\$35,000</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>(\$35,000)</i>
-- School Health	\$15,383	\$15,400	\$0	\$15,400	\$17
-- Health Promotion	\$19,970	\$14,025	\$0	\$14,025	(\$5,945)
-- Community Health Promotion	\$6,348	\$0	\$0	\$0	(\$6,348)
-- Glaucoma	\$3,294	\$3,300	\$0	\$3,300	\$6
-- Visual Screening Education	\$512	\$525	\$0	\$525	\$13
-- Alzheimer's Disease	\$3,344	\$3,500	\$0	\$3,500	\$156
-- Inflammatory Bowel Disease	\$716	\$750	\$0	\$750	\$34
-- Interstitial Cystitis	\$659	\$850	\$0	\$850	\$191
-- Excessive Alcohol Use	\$3,000	\$3,000	\$0	\$3,000	\$0
-- Chronic Kidney Disease	\$2,097	\$2,100	\$0	\$2,100	\$3
-- Prevention Research Centers	\$25,461	\$25,461	\$0	\$25,461	\$0
-- <i>Prevention Research Centers (PPHF)</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>
-- Heart Disease and Stroke	\$57,037	\$87,037	\$0	\$87,037	\$30,000
-- <i>Heart Disease and Stroke (PPHF)</i>	<i>\$73,000</i>	<i>\$0</i>	<i>\$73,000</i>	<i>\$73,000</i>	<i>\$0</i>

# Funds appropriated for vector-borne and related diseases

*Dollars in thousands*

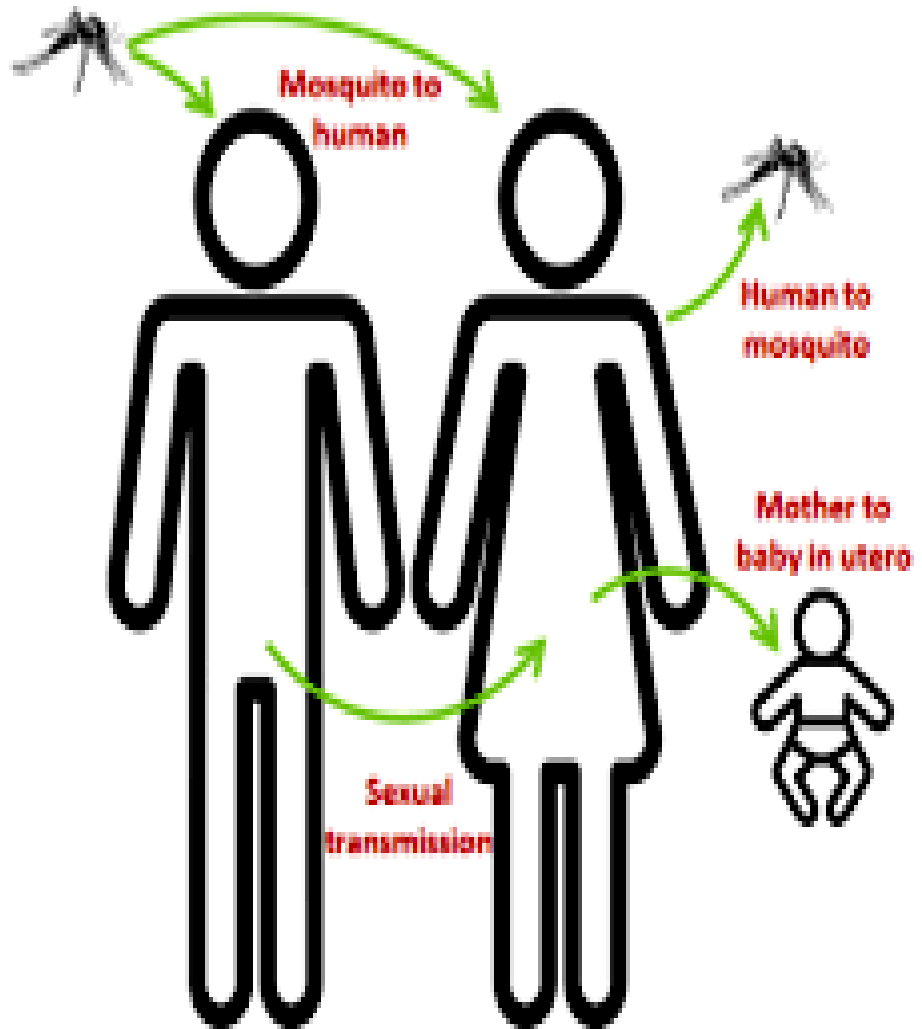


# Zika Overview



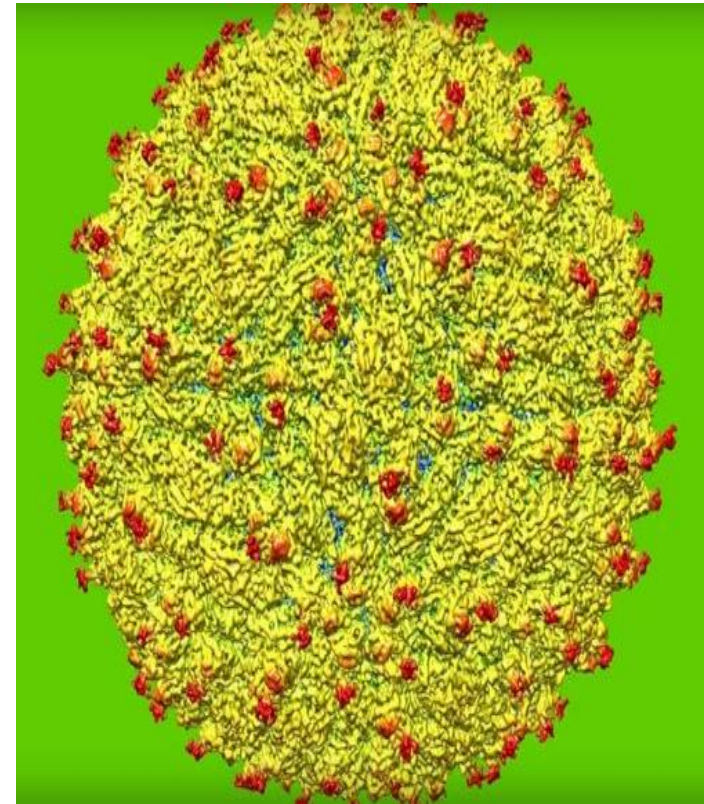
# Zika Virus: Transmission Routes

- Zika virus infection was only recently detected in the Americas
  - Same mosquitoes that spread dengue and chikungunya
- Three patterns of transmission
  - Direct bites by infected mosquitoes
    - Active transmission
    - Sporadic transmission
  - Trans-placental
  - Sexual



# Zika Virus Is a Public Health Emergency that Poses Significant Risks to Pregnant Women

- Zika is the latest in a series of unpredicted & unpredictable health threats
  - We learn more every day
  - Serious problem requiring urgent action
- Most serious risk is to pregnant women & developing fetus
  - For first time in >50 years, a virus has been linked to microcephaly, other serious birth defects, and poor pregnancy outcomes
  - Also associated w/ Guillain-Barré syndrome



# PRIORITY: REDUCING ZIKA RISK IN PREGNANCY

- Pregnant women advised to
  - Not travel to affected areas
  - In affected areas, prevent mosquito bites
- Research underway to understand
  - Risk of birth defects
  - Time in pregnancy when Zika infection poses highest risk
  - Possible co-factors (e.g., prior/concurrent infections, nutrition, toxins)
  - Spectrum of effects
  - Duration of sexual transmission risk



AP Photo/Felipe Dana



# We Have Learned and Done Much but Need to Learn and Do Even More

## Key things we've learned

- Evidence of link w/ microcephaly
- Mounting evidence of link w/ Guillain-Barre
  - Neurotropic virus
- Range of adverse pregnancy outcomes
- Sexual transmission more common than expected
- Pregnant women are keen to take action to protect themselves against Zika
- **There is much more to be learned and done**

## Key things we're doing

- Travel and testing guidance
- Clinical guidelines for pregnant women, babies & children w/ possible Zika infection and for couples interested in conceiving
- Clinical guidelines to prevent sexual transmission
- Laboratory tests to states and international partners (MAC-ELISA and Trioplex rRT-PCR)
- Studying how long Zika virus stays in semen, urine & breast-milk
- Vector control, support to pregnant women, and safe blood in Puerto Rico



# LABORATORY DIAGNOSTICS



**Some factors that contribute to the spread  
of mosquito-borne illness**

# THE AEDES AEGYPTI MOSQUITO



# THE AEDES AEGYPTI MOSQUITO





# EXPERIENCE WITH DENGUE & CHIKUNGUNYA IN THE US

- Air conditioning, screened windows and doors, and lower levels of crowding limit transmission in the continental United States
- Dengue
  - Outbreak on the US-Mexico border
  - Substantial *Aedes aegypti* populations in both locations
  - 4% infected in Brownsville (TX) vs 32% in Matamoros (Mexico)
    - 85% homes air conditioned in Brownsville; 29% in Matamoros
    - Lots 3 times larger in Brownsville
  - No air conditioning increased dengue risk 7-fold in Matamoros
  - Smaller lot size increased dengue risk 15-fold in Brownsville
- Chikungunya
  - Puerto Rico: 23.5% incidence of infection among blood donors, vs:
  - >2,500 infected returning travelers in 2014 and 12 known locally acquired in Florida

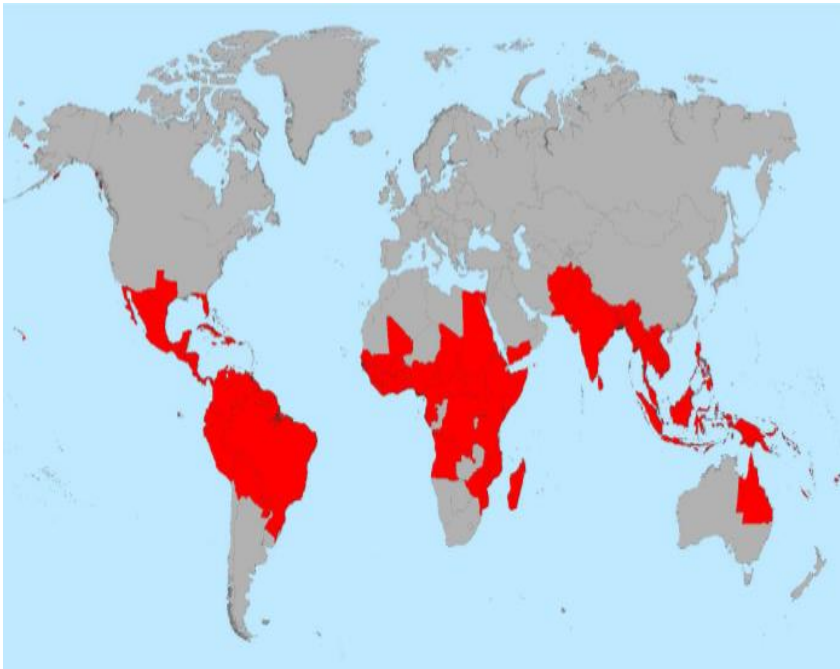


Am J Trop Med Hyg 2008;78: 364-9



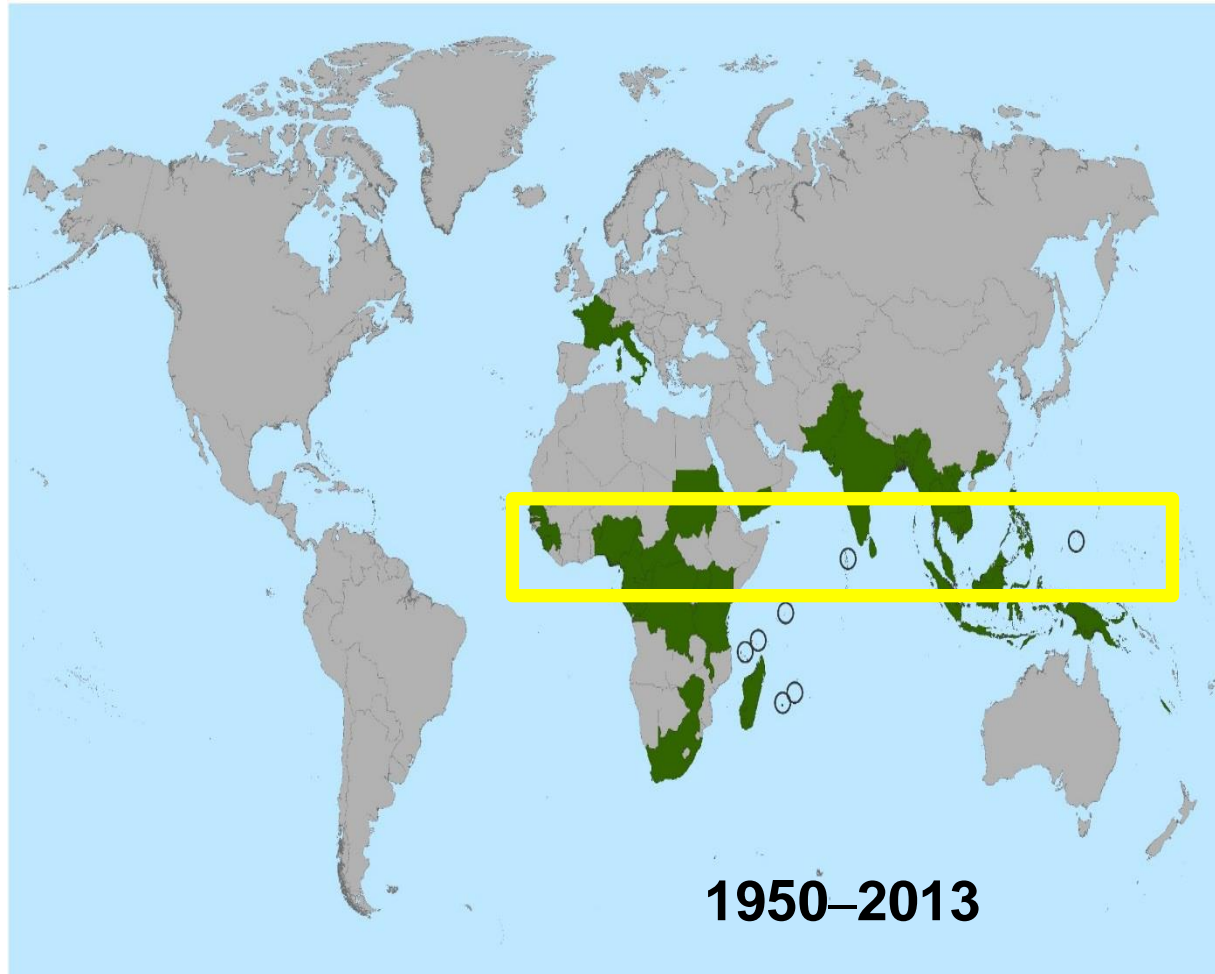
# DENGUE – SPREAD BY SAME MOSQUITO AS ZIKA

Dengue

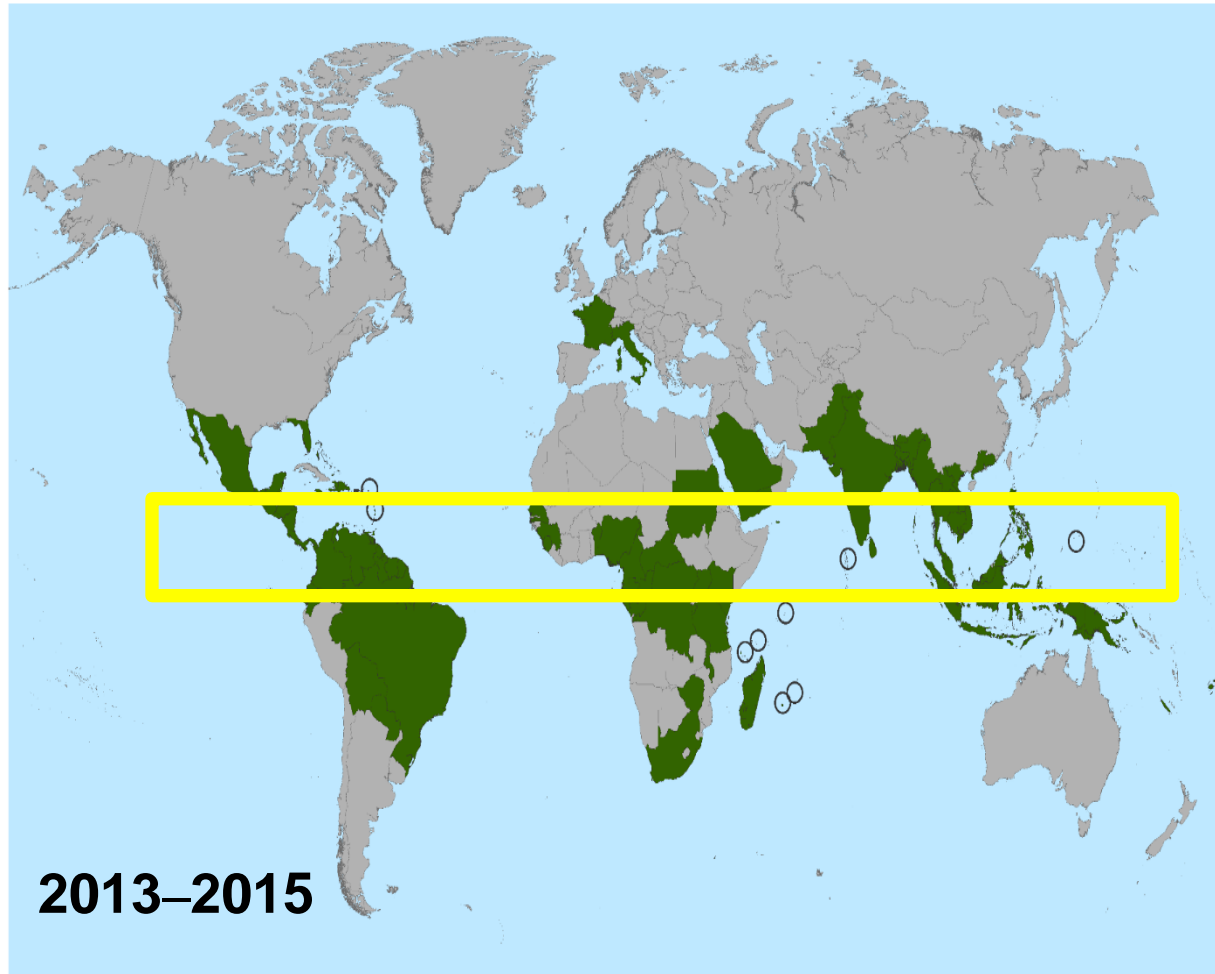


*Approximate geographic distribution*

# CHIKUNGUNYA – ALSO SPREAD BY SAME MOSQUITO



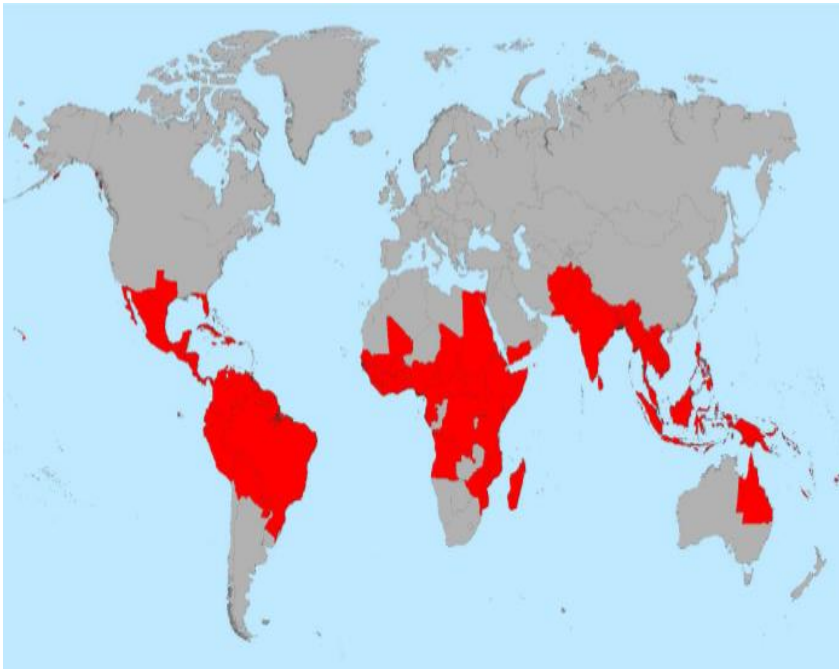
# SPREAD OF CHIKUNGUNYA



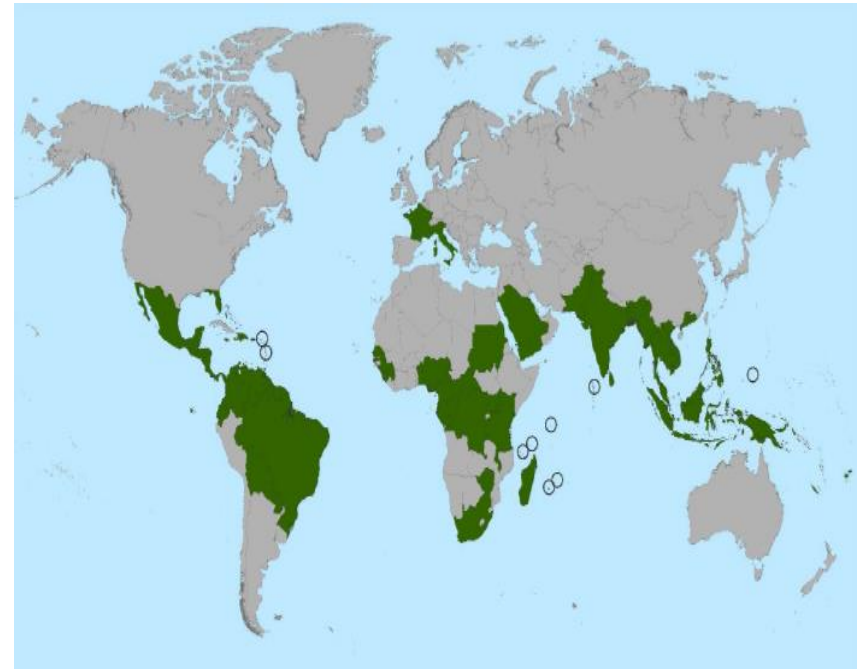


# KNOWN TRANSMISSION OF DENGUE AND CHIKUNGUNYA VIRUSES

Dengue



Chikungunya



*Approximate geographic distributions*



# RAPID SPREAD OF CHIKUNGUNYA, PUERTO RICO

## Through May 10, 2014



*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*

# RAPID SPREAD OF CHIKUNGUNYA, PUERTO RICO

## Through May 24, 2014



*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*

# RAPID SPREAD OF CHIKUNGUNYA, PUERTO RICO

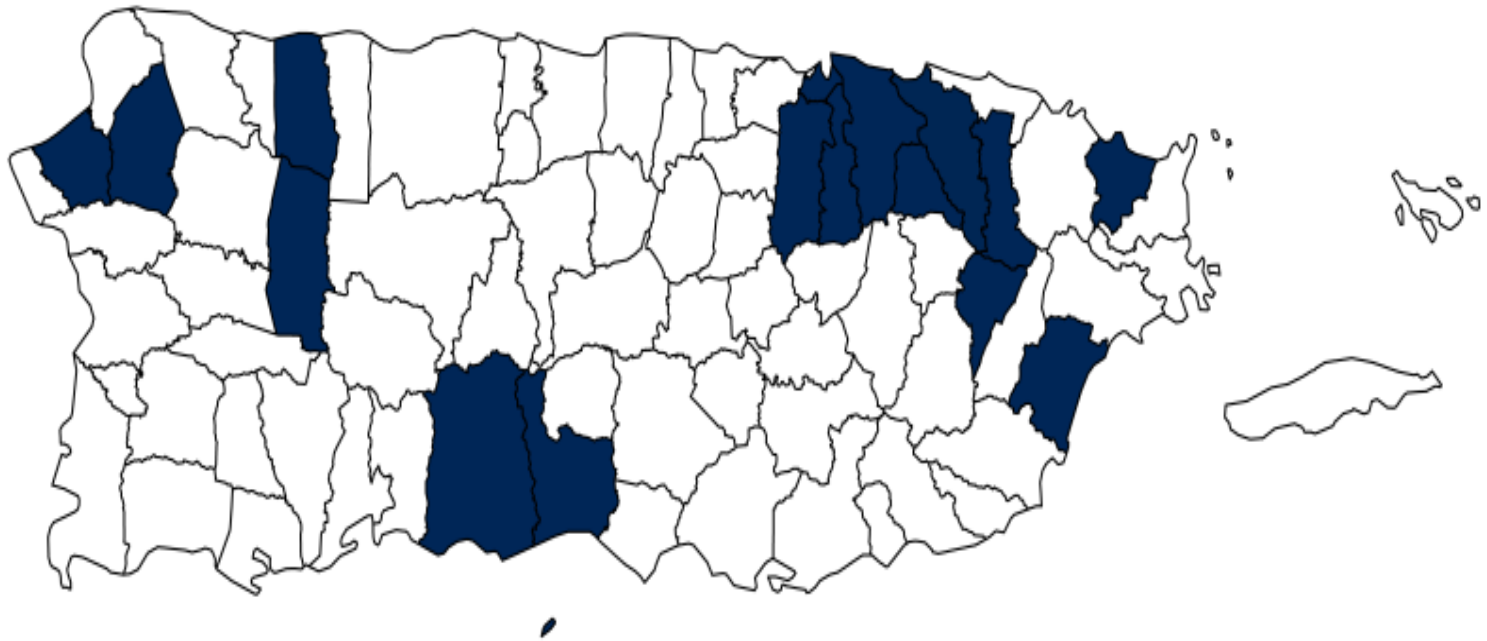
## Through June 7, 2014



*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*

# RAPID SPREAD OF CHIKUNGUNYA, PUERTO RICO

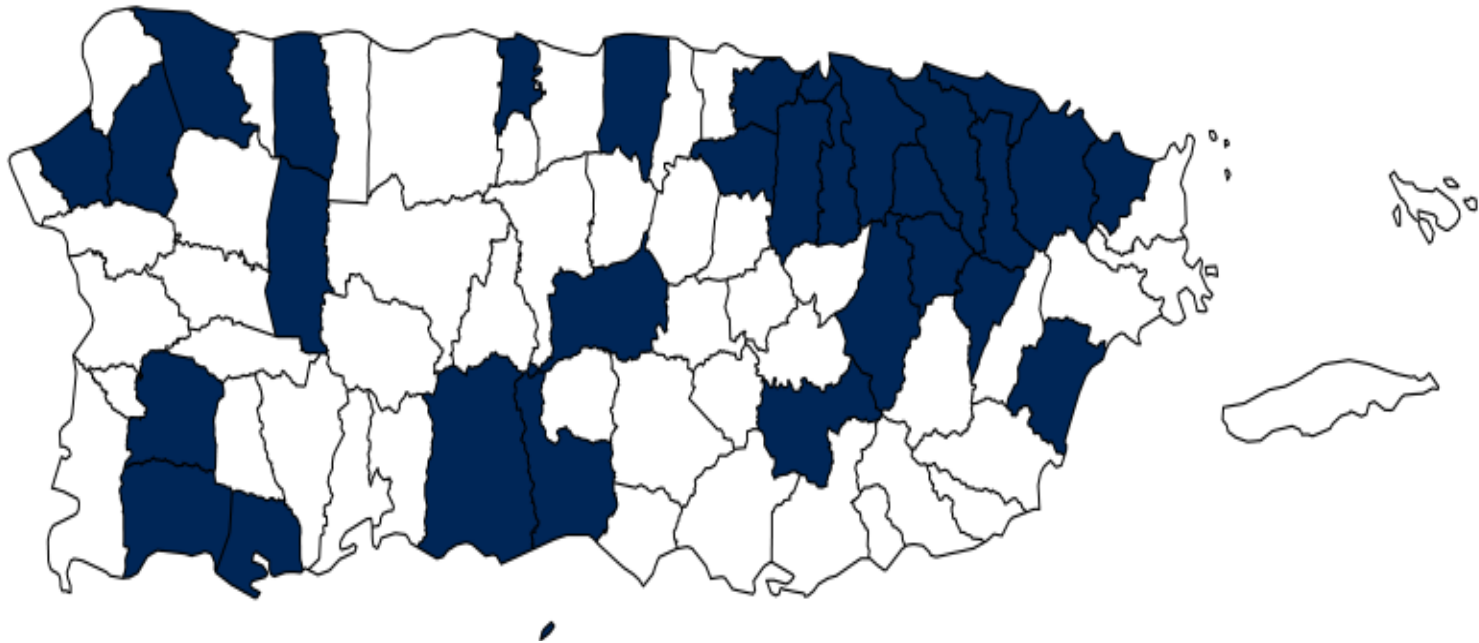
## Through June 21, 2014



*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*

# RAPID SPREAD OF CHIKUNGUNYA, PUERTO RICO

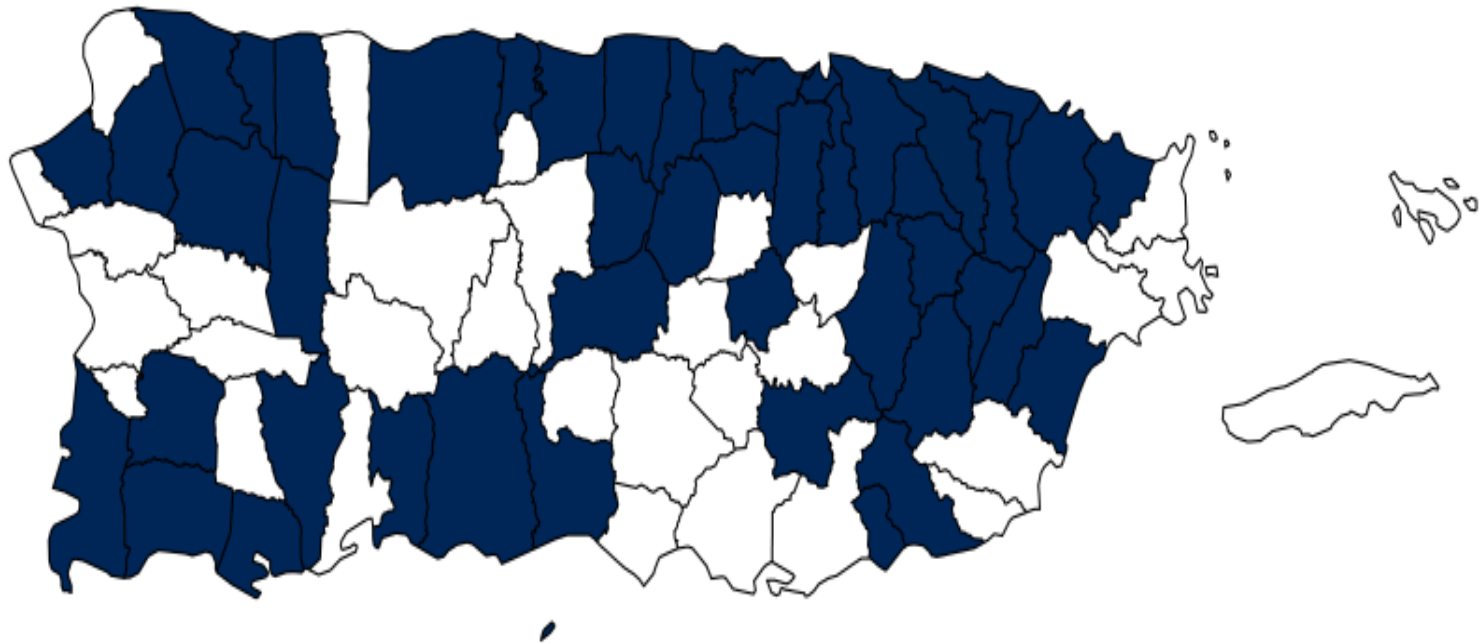
## Through July 5, 2014



*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*

# RAPID SPREAD OF CHIKUNGUNYA, PUERTO RICO

## Through July 21, 2014

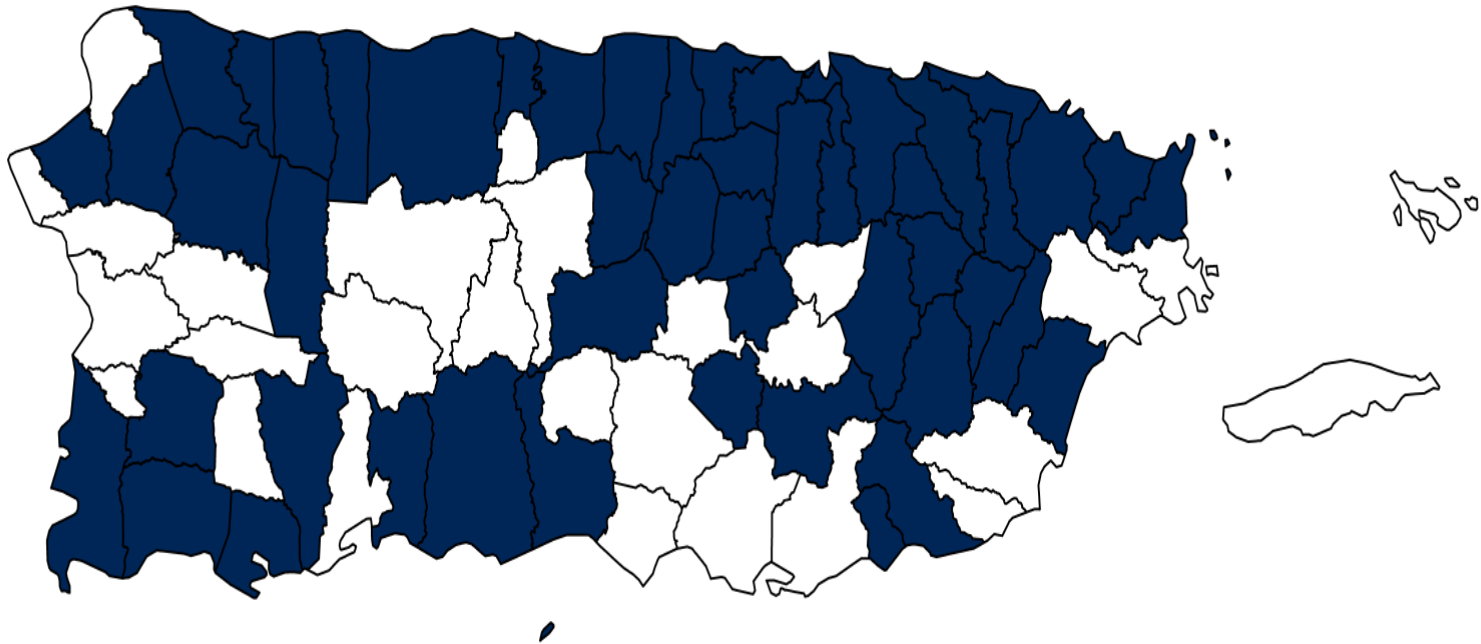


*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*



# RAPID SPREAD OF CHIKUNGUNYA, PUERTO RICO

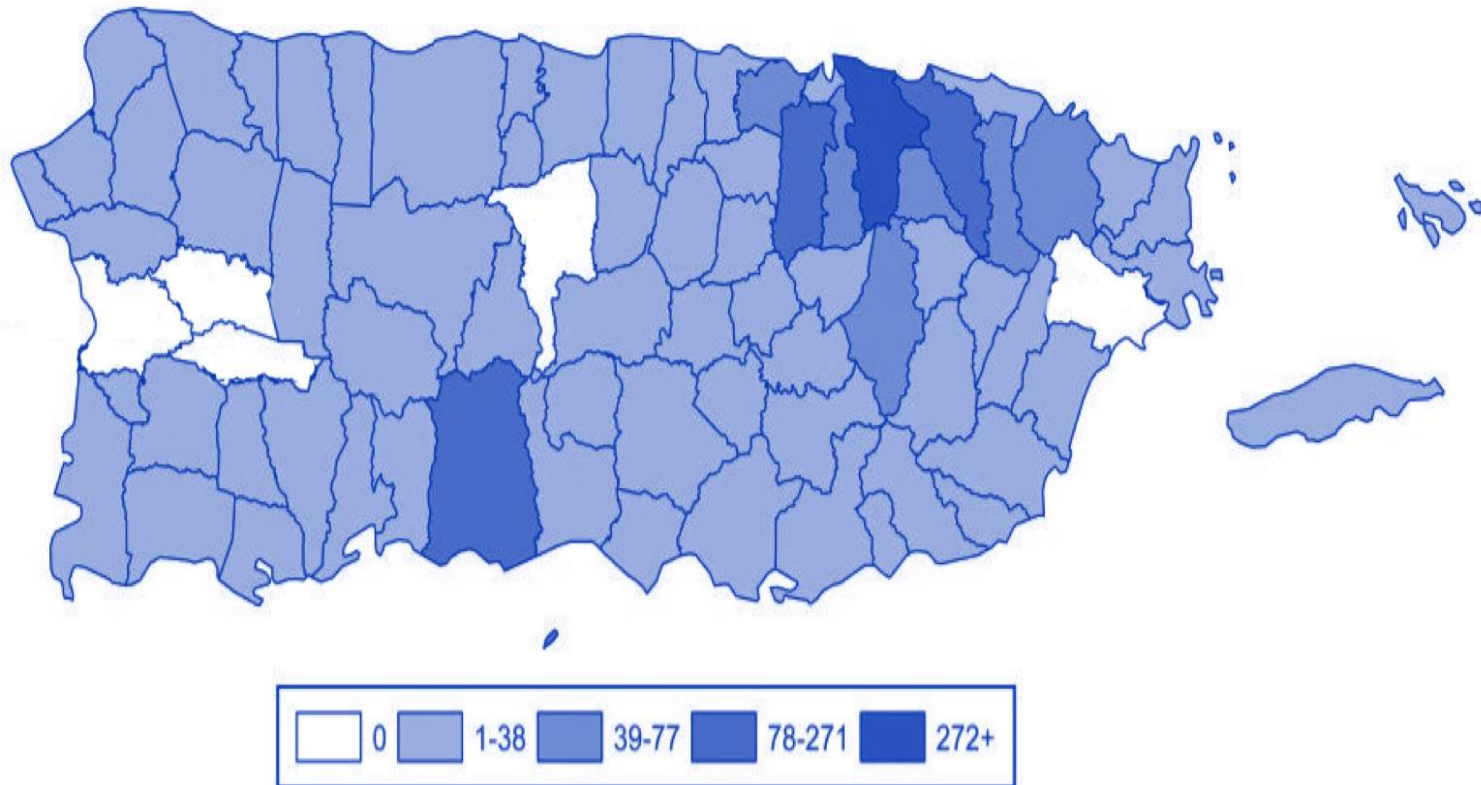
## Through August 2, 2014



*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*

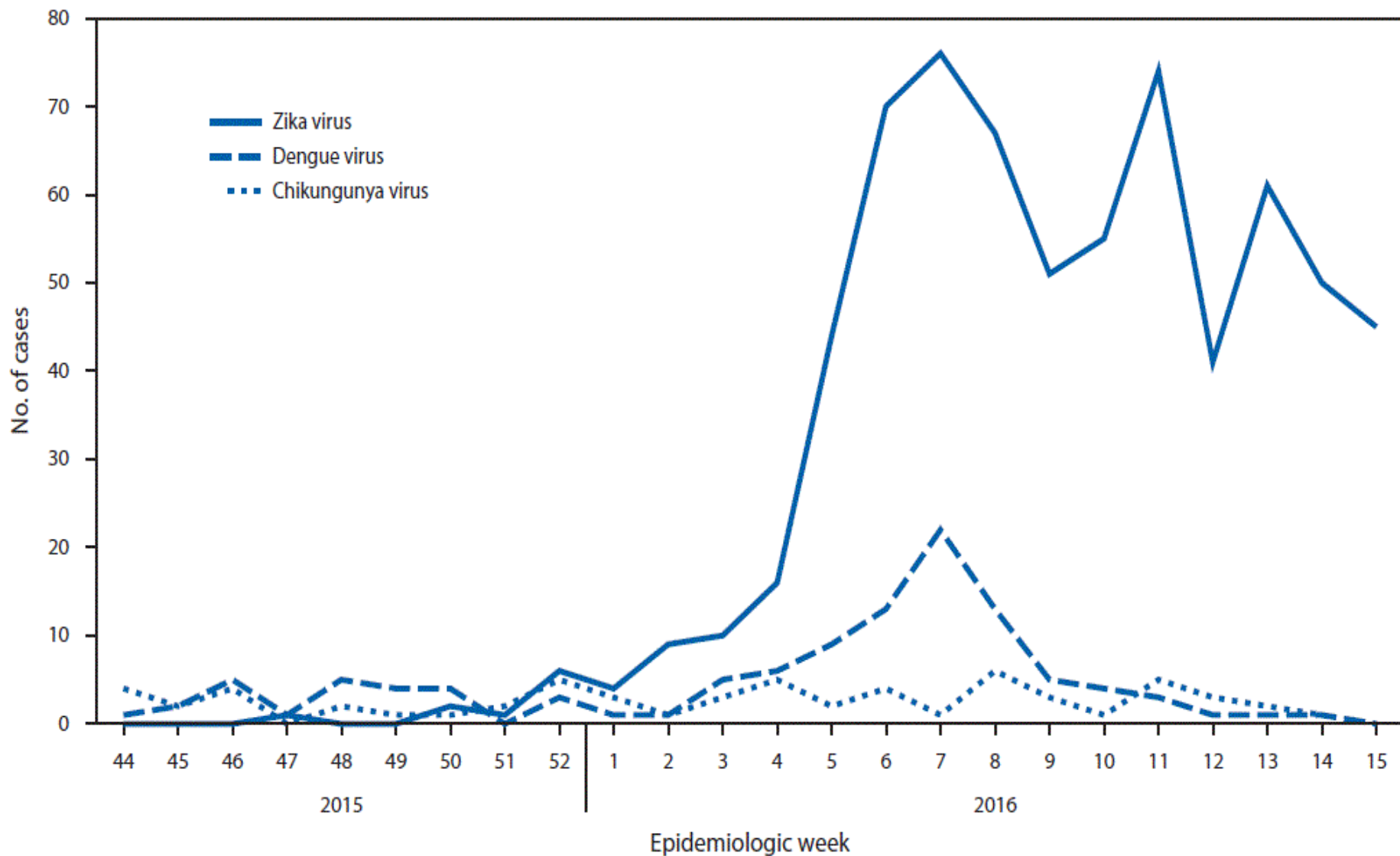
# CHIKUNGUNYA CASES, PUERTO RICO

## May – October 2014

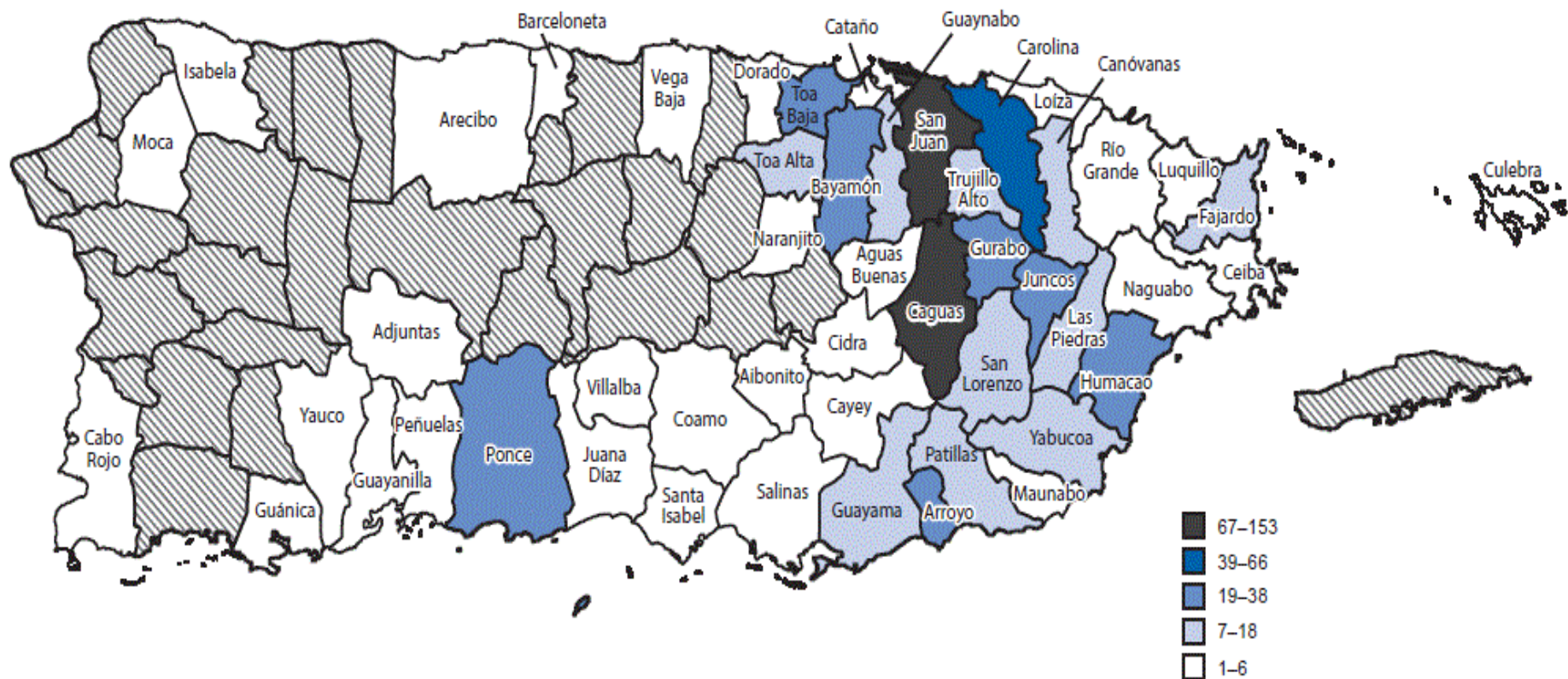


*Laboratory confirmed cases*  
*First confirmed case May 5, 2014*

Cases of Zika virus disease (n = 683), dengue (n = 110), and chikungunya (n = 61) by week of onset of patient's illness — Puerto Rico, November 1, 2015–April 14, 2016



**Municipality of residence of persons with Zika virus disease (n = 679)\* —  
Puerto Rico, November 1, 2015–April 14, 2016**



# ESTIMATED range of *Aedes aegypti* and *Aedes albopictus* in the United States, 2016 Maps

\*Maps have been updated from a variety of sources. These maps represent CDC's best estimate of the potential range of *Aedes aegypti* and *Aedes albopictus* in the United States. Maps are not meant to represent risk for spread of disease.



*Aedes aegypti*



*Aedes albopictus*



# Vector Control & Surveillance

- Challenging mosquito
- Need to know where it is (surveillance)
- No one method to control
- Standing water elimination
- Window screens
- Determining resistance
- Indoor/outdoor spraying, adult and larval
- Personal protection
- Innovative methods



This is an official  
**CDC HEALTH ADVISORY**

**ZIKA HEALTH ADVISORY**

**Pregnant?**

Zika is linked to birth defects.

Going to or coming from areas with Zika?

Protect yourself during pregnancy:

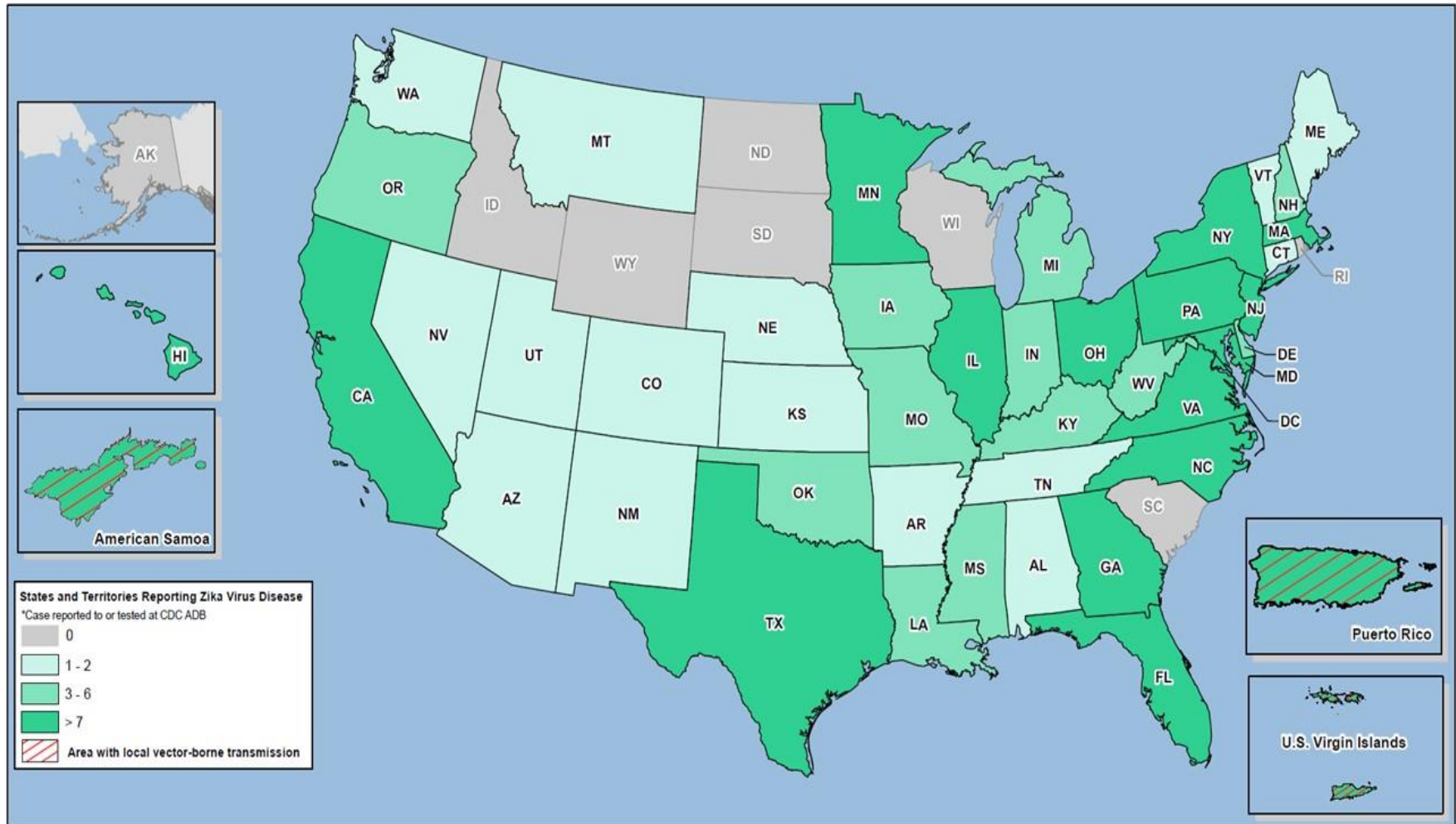
- Don't let mosquitoes bite you.
- Talk to your doctor about the risk to your pregnancy.

Where is Zika? Find out at [www.cdc.gov/travel](http://www.cdc.gov/travel).





# Zika virus disease in the United States, 2015–2016



**Zika funding request**

# Zika Emergency Funding Request

- Administration has asked Congress for \$1.9 billion in emergency funding to prepare for, respond to, and protect people from Zika in the United States and abroad
- CDC is part of a robust response involving many US government agencies and other domestic and international partners

## **PRESIDENT OBAMA IS CALLING ON CONGRESS TO FIGHT THE ZIKA VIRUS BY PROVIDING \$1.9 BILLION IN EMERGENCY FUNDS TO:**

- Rapidly expand mosquito control programs
- Accelerate vaccine research and diagnostic development
- Educate health providers, women, and partners about the disease
- Improve health services and support for low-income pregnant women
- Help Zika-affected countries better control transmission



# HHS Zika Emergency Funding Request: \$1.5 billion

- CDC: \$743 million for public health response in PR, US territories, continental US, and globally
- CMS: \$246 million for increase to Federal Medicaid Assistance %
- NIH: \$277 million for research, including vaccines
- BARDA: \$188 million for advanced development of vaccines, diagnostics and pathogen reduction technology
- FDA: \$10 million for vaccine & diagnostic development & review
- HRSA: \$20 million for health centers, MCH, health professionals and countermeasure injury protection
- HHS Contingency: \$25 million

# CDC ZIKA EMERGENCY SUPPLEMENTAL REQUEST – \$743 MILLION

- Support Zika preparedness in states/territories with mosquito populations known to transmit Zika
- Enhance mosquito control through lab, epidemiology and surveillance capacity in at-risk areas
- Establish rapid response teams to limit potential US clusters
- Improve lab capacity and infrastructure for Zika and other infectious diseases
- Track Zika virus in communities and in mosquitoes
- Deploy targeted prevention and education strategies
- Expand Pregnancy Risk Assessment Monitoring, improve Guillain-Barré syndrome tracking, & birth defect registries to detect risks related to Zika
- Increase research into link between Zika and microcephaly
- Enhance international capacity for virus surveillance; expand epi training, laboratory testing, health care provider training & vector surveillance/control in high-risk countries
- Improve diagnostics, including advanced methods to refine tests
- Support advanced developments for vector control

# Discussion





Saving Lives.  
Protecting People.™

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CDC WORKS FOR YOU.**



For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

