Department of Defense
Armed Forces Health Surveillance Branch
Global Zika Virus Surveillance Summary
(7 SEP 2016)

Approved for Public Release

For questions or comments, please contact:
dha.ncr.health-surv.list.afhs-ib-alert-response@mail.mil

DEPARTMENT OF DEFENSE (AFHSB)

Global Zika Virus Surveillance Summary #34

7 SEP 2016 (next report 14 SEP 2016)

DoD SURVEILLANCE: As of 1300 on 7 SEP, there are 109 (+1) confirmed Zika virus (ZIKV) disease cases in Military Health System (MHS) beneficiaries (see table for details), since the first case was reported during the third week of 2016. There are two cases in pregnant Service members and one case in a pregnant dependent.

As per the AFHSB updated guidance for detecting and reporting DoD cases of ZIKV disease, confirmed and probable cases should be reported in DRSi as "Any Other Unusual Condition Not Listed," with "Zika" entered in the comment field along with pertinent travel history and pregnancy status.

The CDC Zika IgM MAC-ELISA and CDC Zika Trioplex rRT-PCR are available under an Emergency Use Authorization (EUA) at DoD laboratories (see map on Slide 4).

Strategy for Control of Zika Virus Transmitting Mosquitoes on Military Installations is available from the Armed Forces Pest Management Board.

CASE REPORT: As of 6 SEP, FL health officials have reported 56 (+10) ZIKV infections that were likely acquired through local mosquito transmission (as of 31 AUG, 35 (+6) met the CDC definition of a Zika case). Texas and Taiwan have each reported one Zika case linked to the Miami-Dade outbreak. The FL DOH continues to believe ongoing transmission is only taking place within small defined areas of Wynwood and Miami Beach in Miami-Dade County. The FL DOH is investigating additional areas in Miami-Dade, Palm Beach, and Pinellas counties. On 1 SEP, the FL Department of Agriculture and Consumer Services said that it had detected ZIKV in three mosquito samples from the area of Miami Beach with local transmission. On 19 AUG, CDC updated its health advisory for pregnant women, women of reproductive age, and others traveling to or living in the affected areas.

Zika Cases in the U.S. States and Territories	U.S. States*	U.S. Territories		
		Puerto Rico**	U.S. Virgin Islands*	American Samoa*
Total Zika Cases	2,722 (+205)	16,537 (+2,203)	243 (+67)	47 (+1)
Travel-Associated	2,663 (+198)	-	-	-
Local Vector Transmission	35 (+6)	-	-	-
Laboratory Exposure	1	-	-	-
Sexual Transmission	23 (+1)	-	-	-
Guillian Barré Syndrome (GBS)	7	42 (+2)†	-	-

U.S. Zika Pregnancy Registry Data, as of 25 AUG		
Pregnant Zika Cases	624 (+40)	971 (+159)
Infants Born with Birth Defects	16	1
Pregnancy Losses with Birth Defects	5	1

*Zika cases reported to ArboNET as of 31 AUG (US States and Am. Samoa); USVI cases reported from PAHO as of 1 SEP.
**From the Puerto Rico DOH as of 18 AUG; PR DOH is tracking 1,384 (+140) ZIKV cases in pregnant women.
†Of the 42 GBS cases, 11 are classified as evidence of flavivirus infection, but specific virus undetermined.

Demographics for all confirmed Zika cases in Military Health System Beneficiaries as of 1300, 7 SEP 2016 (N = 109 confirmed cases)			
Demographic		N	%
Service	Army	51 (+1)	46.8%
	Air Force	14 (+1)	12.8%
	Navy	11	10.1%
	Marine Corps	8	7.3%
	Coast Guard	25 (-1)	22.9%
Status *includes Reserve Component	Service Member*	81	74.3%
	Dependent	19 (+1)	17.4%
	Retiree	9	8.3%
Age	0-20	6 (+1)	5.5%
	21-35	52 (+2)	47.7%
	36-50	31 (-1)	28.4%
	51+	13	11.9%
	Not Reported	7 (-1)	6.4%
Gender	Female	37 (+2)	33.9%
	Male	72 (-1)	66.1%

As of 6 SEP, CDC and WHO report 59 countries and territories with a first reported Zika outbreak since JAN 2015; 48 are in the Western Hemisphere, nine are in PACOM and two are in AFRICOM. CDC has issued Alert Level 2, Practice Enhanced Precautions, travel notices for 57 countries and territories and for travelers to the completed 2016 Summer Olympics and the Paralympics, which began on 7 SEP. Evidence of local transmission had been reported from other areas of Africa, Southeast Asia, and the Pacific Islands prior to JAN 2015 and sporadic transmission may continue to occur, such as in Malaysia, Thailand, and the Philippines. CDC says locations above 6,500 feet elevation present minimal transmission risk. On 7 SEP, Singapore reported 283 Zika cases since it first detected local transmission on 27 AUG. WHO said no ZIKV infections have been linked to the Summer Olympic Games as of 2 SEP.

Text updated from the previous report will be printed in red; items in (+xx) represent the change in number from the previous AFHSB summary (31 AUG 2016).

All information has been verified unless noted otherwise. Additional sources include: Pacific Public Health Surveillance Network.

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MICROCEPHALY: As of 1 SEP, Brazil (1,845 (+10)), Cape Verde (11), Costa Rica (1), Colombia (38 (+4)), Dominican Republic (3), El Salvador (4), French Guiana (3), French Polynesia (8), Haiti (1), Honduras (1), the Marshall Islands (1), Martinique (10), Panama (5), Paraguay (2), Puerto Rico (1), and Suriname (1) have reported cases of microcephaly and other fetal malformations potentially associated with ZIKV infection or suggestive of a congenital infection. The U.S. (21), Canada (1), Spain (2), and Slovenia (1) have reported travel-associated microcephaly cases. In an early release Emerging Infectious Diseases (EID) article, researchers described early growth and neurologic findings of 48 infants in Brazil diagnosed with probable congenital ZIKV syndrome and followed for one to eight months. In an EID article posted on 7 SEP, Brazilian researchers reported that hospitalizations for neuropathies could be an indicator of increasing ZIKV transmission in a community.

GUILLAIN-BARRÉ SYNDROME: As of 1 SEP, 17 countries in the Western Hemisphere as well as French Polynesia have reported Guillain-Barré syndrome (GBS) cases that may be associated with the introduction of ZIKV. There have been seven GBS cases linked to ZIKV reported in the continental U.S. and 42 (+2) cases in Puerto Rico, 11 (+2) of which are classified as evidence of flavivirus infection, but specific virus undetermined. On 26 AUG a MMWR report summarized Puerto Rico's experience with GBS associated with the Zika outbreak from JAN through JUL 2016. A letter posted by the New England Journal of Medicine on 31 AUG described the strong association between the incidence of ZIKV disease and GBS in seven countries, but the authors said more research is needed to establish a causal relationship between ZIKV infection and GBS..

USG RESPONSE: CDC said on 30 AUG that children with evidence of congenital Zika virus infection who have normal initial hearing screening tests should receive regular follow-up based on research in Brazil. On 26 AUG, Maryland health officials reported in the MMWR a likely case of sexual transmission of ZIKV via vaginal intercourse from an asymptomatic man to his female partner. On 26 AUG, FDA issued revised guidance recommending universal testing of donated whole blood and blood components for ZIKV in all U.S. states and territories, not just those with ongoing ZIKV transmission as previously recommended

On 23 and 24 AUG, CDC published guidance for healthcare facilities on preparing to receive Zika patients, when to test for ZIKV, and ZIKV testing of pregnant women not living in an area with ZIKV. CDC released Update: Interim Guidance for the Evaluation and Management of Infants with Possible Congenital Zika Virus Infection on 19 AUG. On 5 AUG, FDA issued its final environmental assessment for genetically engineered (GE) mosquitoes, concluding that the use of GE *Aedes aegypti* mosquitoes will have no significant impact on the environment. CDC has published an updated interim plan for response activities that would occur after local ZIKV transmission has been identified in the continental United States and Hawaii. Additional data, guidance, and information from CDC is available on its ZIKV web pages.

GLOBAL RESPONSE: On 6 and 7 SEP, WHO updated its guidance for preventing sexual transmission, statement on causality of birth defects and GBS, information for travelers, and travel health advice. Following the fourth meeting of the WHO Emergency Committee concerning ZIKV and observed increases in neurological disorders and neonatal malformations on 1 SEP, WHO said that the clusters of microcephaly cases and other neurological disorders continue to constitute a Public Health Emergency of International Concern (PHEIC). WHO reaffirmed its previous advice, including that there should be no general restrictions on travel and trade with countries, areas, and/or territories with ZIKV transmission. PAHO has created a searchable database of published primary research and protocols. For additional information, visit the WHO and PAHO Zika web pages.

MEDICAL COUNTERMEASURES: HHS's Biomedical Advanced Research and Development Authority issued grants to Moderna Therapeutics and Takeda Vaccines for research and development of ZIKV vaccines. On 4 AUG, researchers from the Walter Reed Army Institute of Research (WRAIR) and Harvard University published a preclinical study in Science demonstrating the efficacy of a Zika purified inactivated virus (ZPIV) vaccine in rhesus monkeys. Results indicated complete protection from ZIKV with no detectable virus in blood, urine, or secretions; Phase 1 clinical testing of the vaccine, co-developed with Sanofi-Pasteur, is expected to begin later this year. On 26 JUL, Inovio Pharmaceuticals began a Phase 1 trial of its Zika DNA vaccine (GLS-5700) and launched a double-blind clinical trial of the vaccine in Puerto Rico on 29 AUG.

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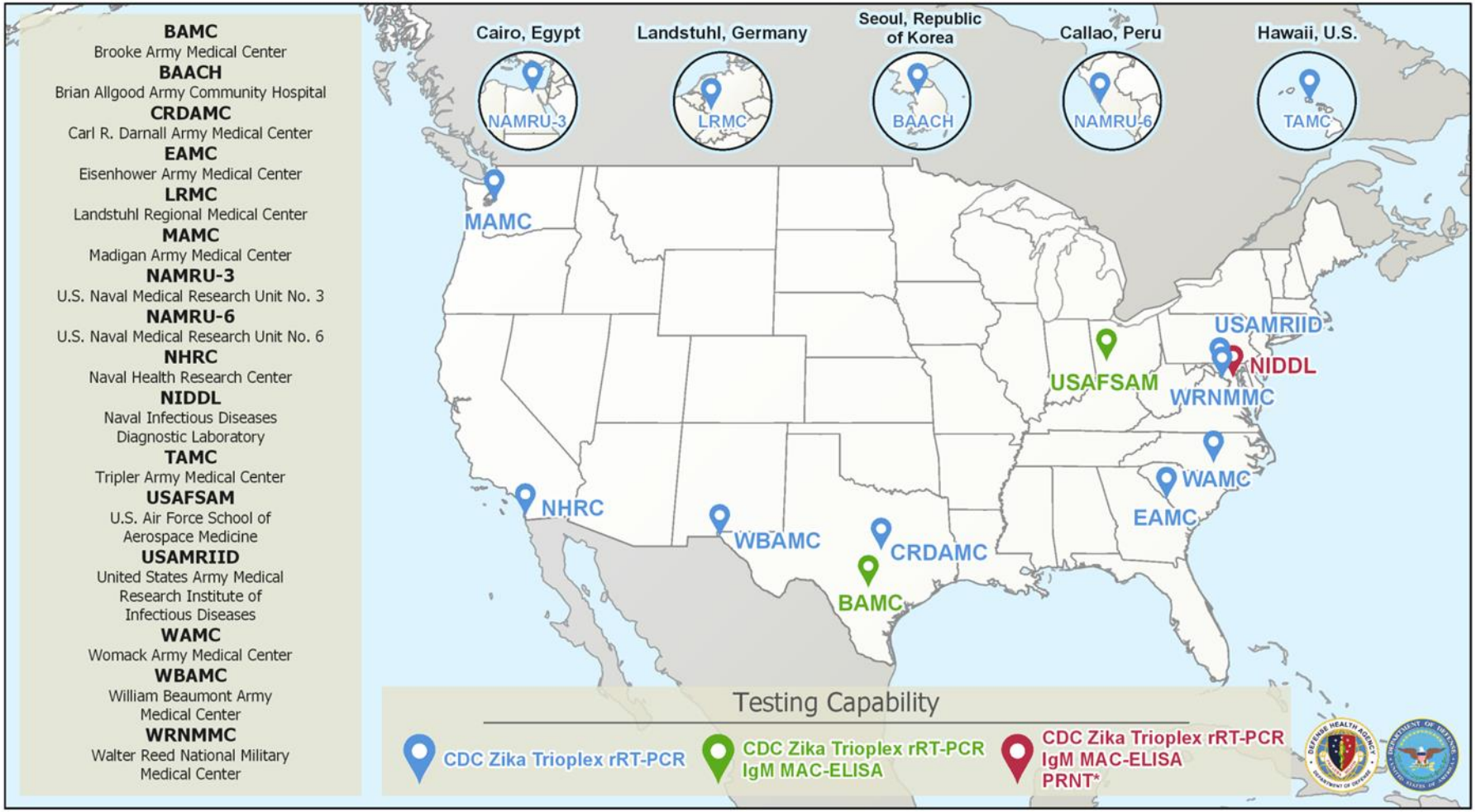
Emergency Use Authorization Zika Testing at DoD Laboratories



*Plaque-reduction neutralization test (PRNT)

As of 7 SEP 2016

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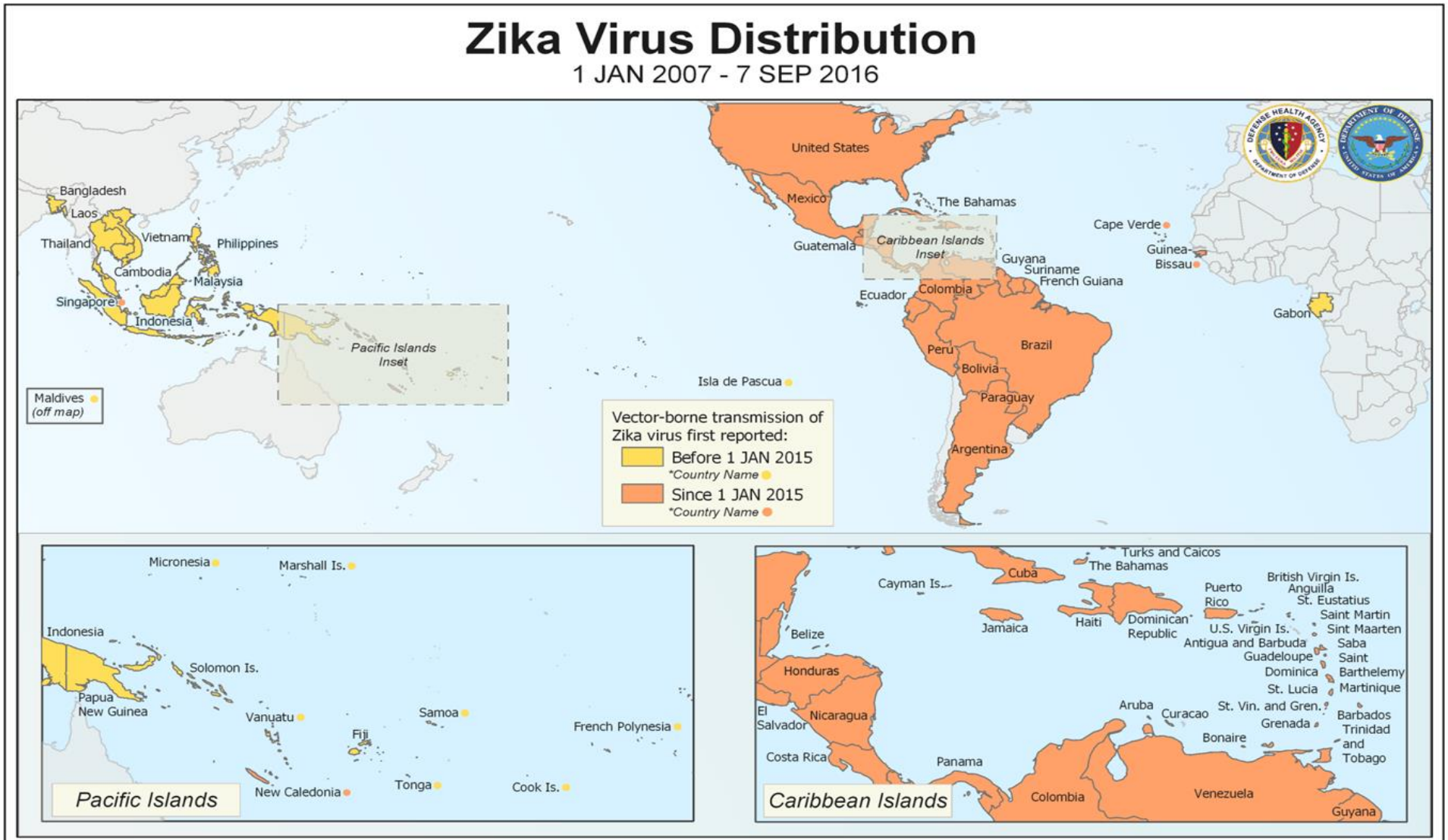

*Countries with a small footprint are given a marker by their label to denote current or previous Zika presence.

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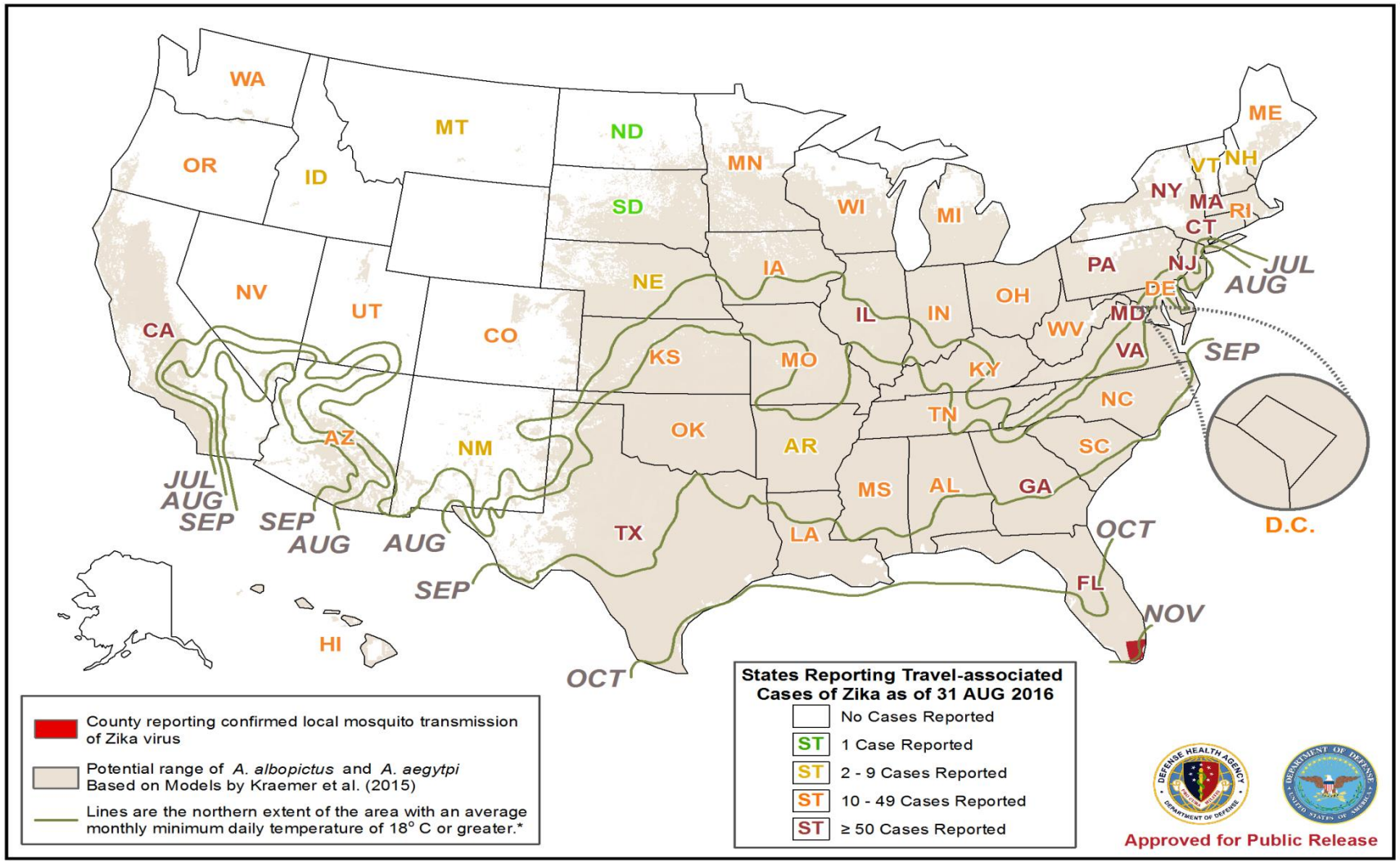
Overlap of States Reporting Imported Zika Cases and the Estimated Range of Mosquito Vectors and Transmission Suitability

7 SEP 2016



This version of the map shows that after JUL the northern extent begins to move southward.

Based on Sang et al, Predicting Unprecedented Dengue Outbreak Using Imported Cases and Climatic Factors in Guangzhou, 2014. PLoS Negl Trop Dis 9(5);e0003808.

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Western Hemisphere Countries‡ and Territories with Autochthonous Transmission of Zika Virus: 01 JAN 2015 – 1 SEP 2016

	Confirmed	Suspected	Microcephaly Cases*	Reporting GBS†
Total	115,542	492,779	1,915	17 Countries/Territories

Country/Territory	Confirmed	Suspected	Microcephaly Cases*	Reporting GBS†
Anguilla	2	20		
Antigua & Barbuda	5	14		
Argentina	24	1,756		
Aruba	21	0		
Bahamas	6	0		
Barbados	20	545		
Belize	5	0		
Bolivia	126	0		
Bonaire, St. Eustatius, Saba	9	0		
Brazil	78,421	196,978	1,845	Yes
British Virgin Islands	5	0		
Cayman Islands	5	0		
Colombia	8,826	93,515	38	Yes
Costa Rica	839	1,509	1	Yes
Cuba	3	0		
Curaçao	208	0		
Dominica	68	980		
Dominican Republic	318	5,109	3	Yes
Ecuador	727	2,182		
El Salvador	51	11,015	4	Yes
French Guiana	483	9,535	3	Yes
Grenada	72	309		Yes
Guadeloupe	379	28,665		Yes

Country/Territory	Confirmed	Suspected	Microcephaly Cases*	Reporting GBS†
Guatemala	437	2,397		Yes
Guyana	6	0		
Haiti	5	2,955	1	Yes
Honduras	225	30,735	1	Yes
Jamaica	73	4,609		Yes
Martinique	12	35,230	10	Yes
Mexico	2,133	0		
Nicaragua	1,661	0		
Panama	272	1,463	5	Yes
Paraguay	10	525	2	
Peru	95	0		
Puerto Rico	16,537	0	1	Yes
Saint Barthelemy	61	535		
Saint Lucia	38	790		
Saint Martin	200	1,990		
Saint Vincent & the Grenadines	38	156		
Sint Maarten	49	0		
Suriname	720	2,712	1	Yes
Trinidad and Tobago	334	0		
Turks & Caicos	2	0		
U.S. Virgin Islands	243	518		
Venezuela	1,768	56,032		Yes

* Number of microcephaly and/or CNS malformation cases suggestive of congenital infections or potentially associated with ZIKV infection

† Reported increase in GBS cases associated with the introduction of ZIKV and/or GBS case(s) linked to ZIKV infection

‡ Excludes the U.S.; this data can be found elsewhere in this report.

All data was obtained from PAHO, Ministries of Health, and Departments of Health unless otherwise noted.

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