

# THE ZIKA VIRUS

## IMPLICATIONS AND RECOMMENDATIONS FOR AN EFFECTIVE PREVENTION STRATEGY

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Zika is a virus that is transmitted to humans through the bite of a mosquito<sup>1</sup> and between humans through sexual activity<sup>2</sup> or via perinatal transmission between a pregnant person and the fetus.<sup>3</sup>

**Symptoms:** Common symptoms of Zika infection include fever, rash, headache, joint pain, muscle pain, and notably, conjunctivitis.<sup>1</sup> A person that is infected with Zika may experience mild symptoms for about 7 days, but many experience no symptoms at all and may be unaware of being infected.

**Prevention:** Prevention primarily depends on reducing or impeding the possibility of becoming bitten by mosquitos (i.e. wearing long-sleeved clothing, reducing time outdoors, removing pools of standing water, using repellants, and/or refraining from traveling to areas with Zika epidemics). Prevention also depends on using latex condoms/barriers to reduce the risk of transmission between an infected and uninfected sexual partner.

**Highlight:** *Prevention recommendations do not take into account economic realities of consumers.* Repellants may be costly or prohibitively expensive for low-income individuals and families.

**Implications for Latinos:** Research has not been conducted to determine if racial/ethnic groups and/or immigrant groups may differ in perceptions of utility versus toxicity of repellants to influence uptake of repellants.

**Vaccination:** There currently is no vaccine for the Zika virus; scientists at the National Institutes of Health (NIH) are implementing clinical trials to develop a vaccine.

**Immunity:** Once someone has been infected with Zika, it is very likely they will be protected from future infection.

### Why do we need to be concerned about Zika?

Although persons infected with Zika may experience little to no symptoms and/or relatively minimal discomfort, many may not be aware of being infected. This is of concern, as Zika is a virus that can seriously affect pregnancy and a developing fetus, as well as individuals with compromised immune systems. Although less well established, research has also linked Zika to Guillain-Barré Syndrome (GBS).<sup>ii</sup>



Between mosquito and human

**TRANSMISSION ROUTES OF THE ZIKA VIRUS**



Between humans: pregnancy and sex

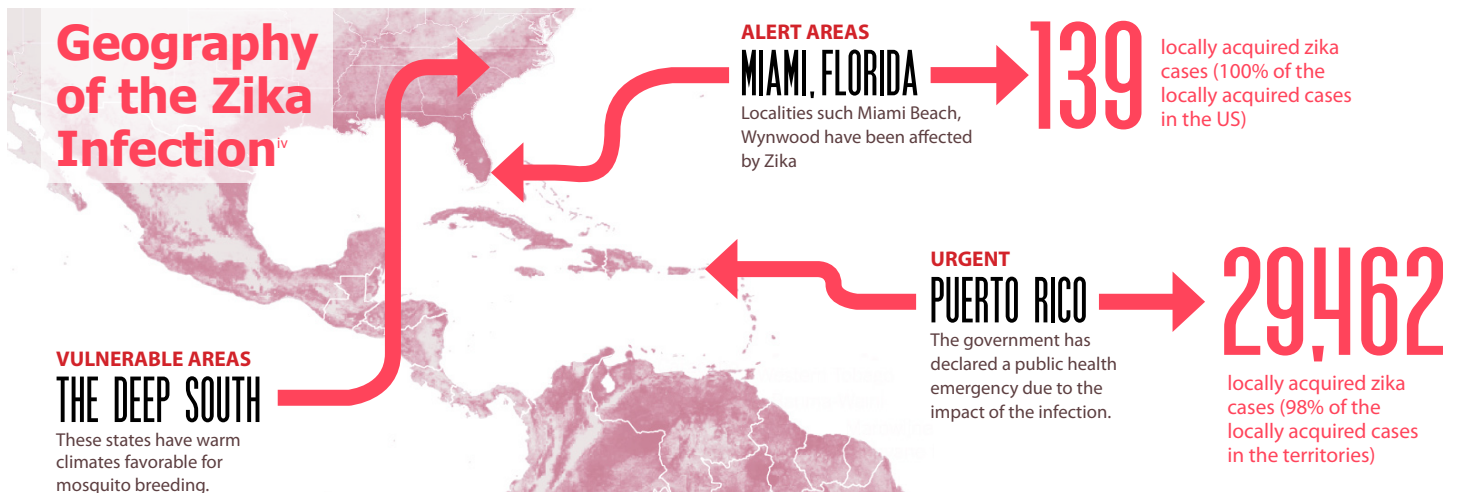


**34,202** NUMBER OF ZIKA VIRUS CASES REPORTED IN THE US AND TERRITORIES AS OF NOVEMBER 2, 2016.



**THERE IS NO VACCINE AGAINST THE ZIKA VIRUS ALTHOUGH THERE ARE DEVELOPMENTS IN STAGE TRIALS.**

1. The Zika virus is transmitted to humans through the bite of a mosquito (*Aedes aegypti* and *Aedes albopictus*) that is carrying the virus. It is known as a *flavivirus* that is "arthropod-borne" (arbovirus). As a mosquito-borne virus, it is similar to dengue and chikungunya.
2. Sexual activity is defined as sexual contact (anal, vaginal, and oral, as well as shared sex toys). American Sexual Health Association.
3. Centers for Disease Control. <http://www.cdc.gov/zika/transmission/index.html>. Accessed August 30th, 2016.



## Women of Reproductive Age

Zika infection during pregnancy can cause microcephaly (a birth defect where a baby’s head is smaller than expected when compared to babies of the same sex and age. Babies with microcephaly often have smaller brains that might not have developed properly) and other severe fetal brain defects. Zika infection during pregnancy has also been linked to an increased risk of spontaneous abortion (miscarriage), stillbirth, and other complications to the fetus during pregnancy. Babies born with microcephaly, as well as other defects linked to the Zika virus, often suffer from serious health conditions and have special needs throughout their lifespan. <sup>iii</sup> There is no evidence that past Zika infection poses an increased risk of birth defects in future pregnancies.

**Highlight:** *Prevention recommendations do not take into account two critical realities for women in the US<sup>a</sup>: (1) almost half of all pregnancies are unintended and (2) pregnancy prevention methods and options for legally and safely terminating pregnancy are not equitably distributed throughout the United States and the territories. See Guttmacher Institute’s Unintended Pregnancy in the United States Fact Sheet, March 2016.*

**Implications for Latinos:** Compared to their counterparts in the general population, Latinos/Hispanics are younger, and Latinas are of reproductive age. Latinas on average also have the highest birth and fertility rates, compared to non-Hispanic Black and white women. Evidence has continuously shown that Latinas on average (and immigrant Latinas in particular) face more barriers to sexual and reproductive health (SRH) services, information and options compared to their counterparts. See Kaiser Family Foundation: Health Status Indicators – Births; Centers for Disease Control <http://www.cdc.gov/nchs/data/databriefs/db216.pdf>; United States Census Bureau Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2015. 2015 Population Estimates ; Pew Research Center *Hispanic Trends* <http://www.pewhispanic.org/2015/09/28/modern-immigration-wave-brings-59-million-to-u-s-driving-population-growth-and-change-through-2065/9-26-2015-1-30-23-pm-2/>

## Individuals with compromised immune systems

Limited research studies have explored the implications of Zika infection among HIV positive individuals.<sup>(1-2)</sup> However, it is possible that medical conditions or interventions that suppress or alter the immune response may adversely affect the course of an established infection or illness, such as HIV.<sup>(3)</sup> To date, several case reports of Zika virus infection in HIV-infected individuals have been published, all describing mild Zika illness with recovery.<sup>(2-3)</sup>

**Highlight:** *Outcomes related to immunocompromised conditions are heavily influenced by access to healthcare, engagement in care, and adherence to health promoting regimens.*

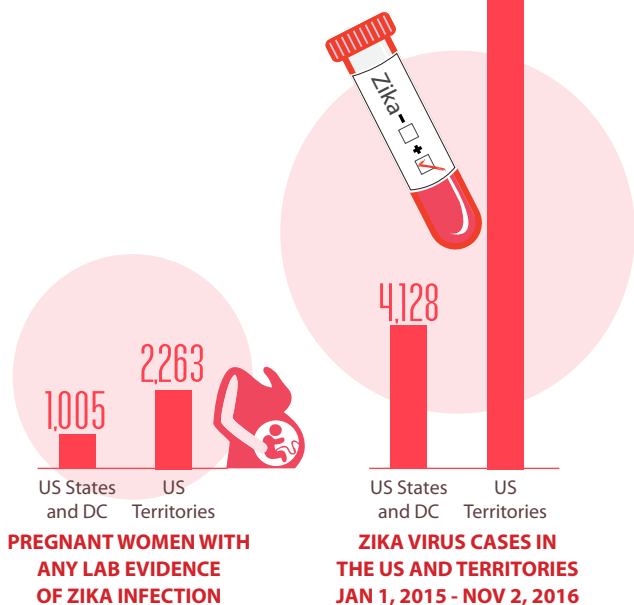
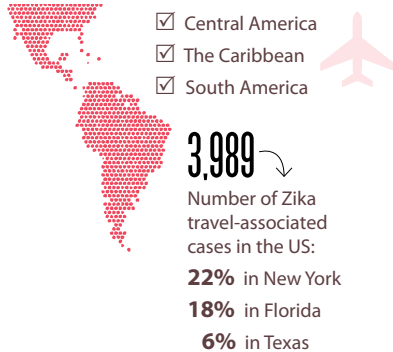
**Implications for Latinos:** Latinos in general have been found to have difficulties accessing services, engaging in care and remaining in care due to insurance status, immigration status, and language barriers. See Health United States 2015 with Special Feature on Racial and Ethnic Health Disparities <http://www.cdc.gov/nchs/data/hus/15.pdf>

## Sexually active individuals

Zika can be spread between humans via sexual intercourse. Evidence suggests that Zika remains in semen longer than in other bodily fluids, including vaginal fluids, urine and blood.<sup>(4)</sup> There have been established cases of the virus transmitted from a male to a sexual partner and, although not as frequent, from a female to a sexual partner.<sup>(5)</sup>

# A DISEASE THAT CAN TRAVEL

THE MAJORITY OF CASES OF ZIKA INFECTIONS WITHIN CONTINENTAL U.S. OCCURED VIA TRAVELERS FROM HEAVILY INFECTED AREAS SUCH AS:



SOURCE: Pregnancy Registries  
AS OF: October 27, 2016

SOURCE: ArboNET  
AS OF: November 2, 2016

## Travelers

The burden of the Zika epidemic at the global scale is found in Latin America and the Caribbean— particularly Central America, The Caribbean, and South America.<sup>(6-7)</sup>

**Highlight:** *Travel recommendations do not take into account realities for transnational families and communities.*

**Implications for Latinos:** Many Latinos (regardless of immigration generation) visit places of birth/heritage to see family and friends on a regular basis, etc. Often, these “home” nations are some of the areas most burdened by Zika such as in Mexico, the Caribbean, Central America, and South America.<sup>b</sup>

# CALLS TO ACTION

The 3 As – availability, accessibility, and acceptability

- 1 US Congress to immediately allocate necessary funding for the development of a short, mid-, and long-term **comprehensive response** to the Zika epidemic in the United States and the territories, urgently in Puerto Rico.
- 2 Equitable allocation of: (1) resources for the optimal sexual and reproductive (SRH) of women of reproductive age, including safe, easily accessible pregnancy prevention methods and termination options and (2) services for special needs children and their families: family health, child welfare, and public education entities in particular must also be prepared to support, value and **honor those births that are affected by Zika** and support the families of these special needs children throughout their lifespans.
- 3 Allocation of specified federal, state and local governmental resources for Zika research, funding for prevention and treatment at the population, community and individual levels, including NIH vaccine development and relative risk estimation.
- 4 Education and awareness **campaigns that do not stigmatize** and/or shame, and are not fear-based; studies have proven time and again that fear-based interventions are not effective for behavioral change. Meaningful engagement of community-based organizations (CBOs), faith-based organizations (FBOs), civic institutions, and ethnic media for social marketing is key to the success of education and awareness campaigns.
- 5 Further research to understand (1) Zika and sexual transmission; (2) impact of **Zika as a comorbidity** of immunocompromised or immune suppressed conditions such as HIV, cancer, autoimmune illnesses, etc.
- 6 Emphasis on responses to Zika transmission in geographically vulnerable locations, including **Puerto Rico and in the Deep South states** where climate and geography include high temperatures and humidity, natural disasters resulting in flooding, standing water and swamps and policies have resulted in pockets of under-resourced areas with limited access to primary and specialized healthcare, including women’s health care and pediatric care.

## Outdoor Occupational Workers

Individuals working outdoors are thus at higher risk to exposure – particularly those working in hot and humid conditions outside (may not be wearing full coverage gear) or near standing water (where mosquitos may breed).

**Highlight:** *Travel recommendations do not take into account realities for migrant workers.*

**Implication for Latinos:** Many migrant workers in the United States are traveling between home countries that are heavily affected by the Zika epidemic (such as in Latin America and the Caribbean) and various geographical locations throughout the United States for employment purposes and responsibilities. Migrant workers traveling throughout Florida and the eastern seaboard states seasonally are particularly vulnerable, as Zika cases in Florida have been determined to be locally acquired. 32% of employed Latinos in the US labor force are in sectors related to construction, natural resources, production, moving of materials – and risk exposure by working outside.<sup>c,d</sup>

## Conclusions

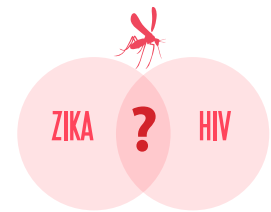
The things we do know about Zika are troubling, but there is still much to be learned. Although prevention tactics are relatively simple, access to prevention methods are **not equitably distributed** among all, especially those most vulnerable. Prevention methods also do not address the realities of many in the general population.

We can learn from past failed responses to epidemics, including those transmitted sexually such as HIV, that relied on fear-based strategies, shaming, and isolation of those deemed “dirty” or “hosts” resulting in increased morbidity and morality disparities and instead opt for meaningful and compassionate responses to vulnerable and affected individuals, families and communities.

## References:

1. <http://www.cdc.gov/zika/hc-providers/clinical-guidance/hivzika.html>
  2. <http://www.iasociety.org/IASONEVOICE/Zika-and-HIV-Connecting-the-Science>
  3. <https://www.gov.uk/guidance/zika-virus-and-immunocompromised-patients>
  4. <http://www.cdc.gov/zika/transmission/sexual-transmission.html>
  5. <http://www.cdc.gov/mmwr/volumes/65/wr/mm6528e2.htm>
  6. [http://www.who.int/emergencies/zika-virus/situation-report/zika\\_timeline\\_2013\\_2016\\_v1.pdf?ua=1](http://www.who.int/emergencies/zika-virus/situation-report/zika_timeline_2013_2016_v1.pdf?ua=1)
  7. <http://wwwnc.cdc.gov/travel/page/zika-travel-information>
- a. <http://www.cdc.gov/zika/pregnancy/index.html>
  - b. <http://wwwnc.cdc.gov/travel/page/travelers-vfr-chikungunya-dengue-zika>
  - c. <https://blog.dol.gov/2016/08/02/how-to-protect-workers-from-zika-exposure/>
  - d. <http://www.bls.gov/opub/reports/race-and-ethnicity/archive/labor-force-characteristics-by-race-and-ethnicity-2014.pdf>

- i. Mukherjee S. *The race for a Zika vaccine*. The New Yorker, August 22, 2016.
- ii. Centers for Disease Control. Morbidity and Mortality Weekly Report (MMWR). Guillain-Barre Syndrome during ongoing Zika virus transmission – Puerto Rico, January 1 – July 31, 2016 <http://www.cdc.gov/mmwr/volumes/65/wr/mm6534e1.htm> Accessed August 30th, 2016. GBS is a *postinfectious autoimmune disorder* – a condition resulting from a prior infection that affects the immune system, leaving it to mistakenly attack itself. GBS is characterized by muscle weakness, tingling or prickly sensations in the fingers and toes, and difficulty moving, Muscle weakness can affect the limbs as well as the muscles used for talking, swallowing, or eye movement, and can progress to paralysis.
- iii. <http://www.cdc.gov/zika/pregnancy/question-answers.html>
- iv. <http://www.cdc.gov/zika/geo/united-states.html> retrieved November 7, 2016



RESEARCH LOOKING AT IMPLICATIONS OF ZIKA AMONG HIV POSITIVE PEOPLE IS LIMITED



visit us at: [www.latinoaids.org](http://www.latinoaids.org)