The Zika Virus

Implications for Collaboration across Human Services Agencies and State Action Plans

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INTRODUCTION

During the past year, the mosquito-borne Zika virus has captured the world's attention as news of babies born with abnormally small heads and neurological defects made headlines across the western hemisphere. Human service agencies, including early intervention, child care, early childhood, and public welfare agencies will be responsible for supporting and assisting individuals and children affected by Zika. However, many agencies do not know where to start preparations, how to predict impact and prevalence, or how to connect with existing public health preparations. This white paper is designed to help human service agencies start the conversations, coordination and preparation necessary to support the families they serve who are affected by the Zika virus. Beginning with a look at the causes and costs of the Zika virus, this paper then explores state government and provider planning efforts and offers actionable suggestions for prevention and intervention. Finally, the paper provides a comprehensive list of state-by-state online resources for Zika action planning.

Part I: The Causes and Costs of the Zika Virus

As of August 31, 2016, the Centers for Disease Control and Prevention (CDC) reports 2,722 cases of Zika infection in mainland United States (US) and 14,059 cases in US territories, mostly in Puerto Rico.[i] Zika is transmitted by infected mosquitos and through sexual relations and blood transfusions. The largest number of US Zika cases is in New York state, where individual and family travel patterns contribute to Zika exposure. Especially hard hit over time may be communities with frequent travelers to Puerto Rico, the Caribbean, Central and South America. Beyond the human suffering that will accrue due to Zika, health economists are estimating the virus' global economic impact could reach $3.5 billion in the coming year.[ii] Current estimates suggest an average lifetime cost of treatment and care for surviving babies born with brain and neurological abnormalities (see page 3) could range from $1 million to more than 10 million dollars for each affected child.[iii]

WHAT IS ZIKA?

Zika is flavivirus[iv] that can cause significant neurologic damage to a fetus during pregnancy. The Zika virus has existed in Africa for many years, but has only recently been identified in both South and North America.[v] The virus is largely spread through the bite of an infected *Aedes* species mosquito (*Ae.aegypti* and *Ae. albopictus*); however, transmission through sexual relations and blood transfusions also occurs. While presenting itself through flu-like symptoms that appear to last about a week, the Zika virus can result in permanent and devastating neurological impairments for the fetuses of women infected with the virus. At the present time, there is no vaccine for the Zika virus.

HOW IS ZIKA TRANSMITTED?

The mosquitoes that spread the Zika virus lay their eggs in standing water near areas that house people, including animal dishes, flower pots and buckets. They prefer to bite people rather than animals, and to live indoors or near homes. One Zika infected mosquito may live its whole life in a single home. A mosquito becomes infected when it bites a person who carries the Zika virus and it then spreads the virus to others that it bites.[vi] While these particular mosquitoes are "aggressive daytime biters," they also bite at night. Thus prevention and protection is needed over the 24-hour cycle of each day in areas where mosquitos known to carry the virus are located as well as among people who travel to and from infected areas.

The Zika virus can pass through the placenta of an infected woman to her fetus during pregnancy or be passed to the child "around the time of birth…There are no reports of infants getting Zika through breastfeeding."[vii] The Zika virus can also be transmitted from an infected person to his or her partner during sex. This can occur before, during or after symptoms of the virus are present. It is not yet known how long the Zika virus "…stays in the vaginal fluids of people who have Zika, and how it can be passed to sex partners. We know that Zika can remain in semen longer than in other body fluids, including vaginal fluids, urine, and blood."[viii]

Although not yet documented in the United States, there are multiple reports of Zika transmission through blood transfusions in Brazil. Additionally, five cases of Zika transmission have occurred through laboratory exposure, one of which occurred in the United States.[ix] The transmission of the Zika virus through human to human contact requires attention not only to the presence and spread of the mosquito population but also to the travel patterns of people going to and from infected areas.

WHAT HAPPENS TO A PERSON WHO CONTRACTS THE ZIKA VIRUS?

The Zika-infected mosquito does not discriminate between children and adults, and symptoms for both are similar. The most common symptoms include fever, rash, joint pain and conjunctivitis but may also include muscle pain and headache. Some infected persons may have no symptoms at all and, thus, many may not seek medical diagnosis and treatment. It appears that once a person has been infected and recovered, he or she is not subject to future Zika infections.[x]

The most serious impact of Zika is on unborn or just born babies, most notably through a birth defect called microcephaly. This condition is characterized by an abnormally small head at birth (see page 3). In addition, recent research reports have also documented "a wide range of neurologic abnormalities" in babies infected with Zika.[xi] Zika-infected babies may experience problems with vision, hearing loss, and impaired growth. Brain abnormalities can be diagnosed through radiologic exams beginning around the 19th week of pregnancy, although the presence of microcephaly is not always obvious at this time.[xii]

There is also mounting evidence from other countries experiencing outbreaks of the Zika virus that Guillain-Barre Syndrome (GBS) is "…strongly associated with Zika; however, only a small proportion of people with recent Zika virus infection get GBS."[xiii] GBS is described by the CDC as "… an uncommon autoimmune disorder characterized by varying degrees of weakness, sensory abnormalities, and autonomic dysfunction due to peripheral nerve or nerve root damage. Countries affected by Zika virus have reported increased numbers of cases of GBS."[xiv] In August 2016, the CDC reported that among a group of recent ZIKA-infected adults with GBS in Puerto Rico, many were hospitalized and six in 10 required intensive in-hospital treatment.

Additionally, recent animal studies at the Rockefeller Institute of New York found that "…adult as well as fetal neural stem cells are vulnerable to Zika virus neuropathology…Thus, although Zika virus is considered a transient infection in adult humans without marked long-term effects, there may in fact be consequences of exposure in the adult brain."[xv]

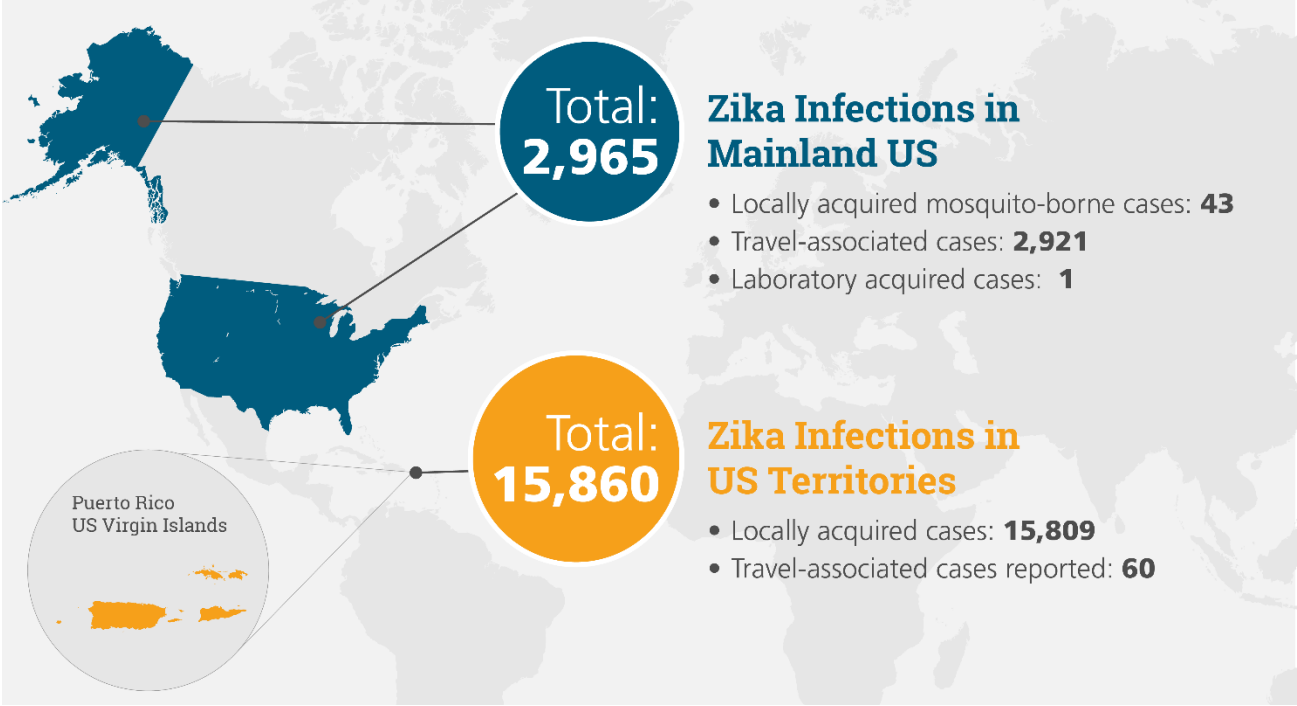
WHAT IS MICROCEPHALY?

The most significant birth defect resulting from a Zika virus infection during pregnancy is microcephaly. Microcephaly literally means "small brain." This neonatal condition may be mild or severe and occurs when the brain of a baby has not developed properly during pregnancy, or started to develop and was damaged during pregnancy, or stopped growing after birth. (CDC Facts about Microcephaly). A broad array of other problems can co-occur with microcephaly, especially when it is severe. These include developmental delays, seizures, problems with balance or movement, hearing and vision problems or loss, difficulty swallowing, dwarfism, hyperactivity, and mental challenges that impair a person's capacity to function in daily life.[xvi]

Until recently, microcephaly was a rare event. Based on data from state birth defect tracking systems, the CDC estimated that between two and 12 babies per 10,000 live births in the United States involved microcephaly. With the advance of the Zika virus, recent estimates of microcephaly now range from 1% to up to 13% of all births to mothers diagnosed with the Zika virus.

WHERE ARE CURRENT CASES OF ZIKA IN THE UNITED STATES?

The CDC maintains a constantly updated website that maps the presence of Zika cases in the United States and in its territories.[xvii] Reported cases are increasing weekly.



While a small number of states account for many Zika cases in mainland America to date – New York (661), Florida (614), California (210) and Texas (161), cases have now been reported in all 50 states.[xviii] Virtually all of these mainland US cases appear to have been acquired through travel to infected areas rather than through local transmission. As has been widely reported in the public media, over 15,800 cases of Zika-infected individuals have been reported in US territories, most in Puerto Rico (15,600) and nearly all of them locally acquired. These data are accurate as of September 15, 2016.

To track births among women infected with the Zika virus, the CDC established the "…US Zika Pregnancy Registry and is collaborating with state, tribal, local, and territorial health departments to collect information about pregnancy and infant outcomes following laboratory evidence of Zika virus infection during pregnancy. The data collected through this registry will be used to update recommendations for clinical care, to plan for services for pregnant women and families affected by Zika virus, and to improve prevention of Zika virus infection during pregnancy."[xix]

> State Zika Action Plans should outline response efforts for communication, surveillance, laboratory testing, vector control, pregnant woman outreach, and blood safety.

As of mid-June 2016 (the latest data publicly reported by the CDC), three women in mainland United States "…delivered infants with birth defects and three others have lost or terminated pregnancies because their fetuses suffered brain damage from the virus." (*Washington Post*, June 15, 2016) Data from Puerto Rico is more immediately alarming. Reporting in June, medical epidemiologists at the CDC estimate that as many as 1500 women in Puerto Rico could be infected and not know it, leading to "…hundreds of infants with microcephaly or other birth defects in the coming year."[xx]

THE ECONOMICS OF ZIKA

Health economists estimate that the global economic impact of Zika could reach $3.5 billion in the coming year.[xxi] The March of Dimes has estimated that the lifetime cost of caring for a child born with microcephaly can exceed 10 million dollars, depending upon the severity of the condition.[xxii] In addition to intensive early intervention and ongoing medical support, some of these children will also need to be served in residential settings. In Puerto Rico alone, it is possible to estimate that 200 babies born with severe microcephaly over the coming year could incur lifetime treatment and care costs of between $200 million and two billion dollars.

On August 24, 2016, the CDC awarded $6.8 million "…to national public health partners to assist state, tribal, local and territorial jurisdictions with their Zika responses…including surveillance and epidemiology, vector control, communications and outreach to pregnant women and vulnerable populations, and planning with key stakeholders."[xxiii] Through the end of August 2016, the CDC awarded more than $194 million of its $222 million allocated to fight the Zika virus including $35 million in Florida alone.[xxiv]

Part II: Government and Provider Planning and Action

ZIKA STATE ACTION PLANNING

This spring, the CDC issued a planning template with guidelines for development of state and local Zika Action Plans.[xxv] Within the context of risk assessments, the guidelines indicate that states should provide information to the public, especially to pregnant women, and also "…assess returning travelers who may have contracted Zika virus infection." In addition, states with Zika involved mosquito species "…need to presume transmission is possible," intensively monitor for cases in returning travelers, be ready to "prevent, detect and respond to cases and possible clusters of Zika infection…and prepare to find and stop clusters of Zika before they become widespread." Response steps to be outlined in state Zika Action Plans thus include: communication; surveillance; laboratory testing; vector control; pregnant woman outreach; and blood safety. The CDC recommends that state governing officials appoint a "senior representative to coordinate Zika response efforts."[xxvi]

PRELIMINARY OBSERVATIONS ON ZIKA PLANNING ACROSS STATES

There is no single gateway site to access all plans. Locating the Zika Action Plans for each state is not difficult, although the search must be conducted on a state-by-state basis. The CDC maintains the US Zika Pregnancy Registry, however, it does not provide links to ongoing state and local public health Zika planning and information websites. As of September 2016, there is no single gateway site with one-step access to every state's plan. This white paper includes a link to each state's Zika website as part of the Resource Catalog presented at the end of this report.

State plans vary considerably. While online state plans follow CDC guidelines, the amount of information offered on states' websites varies dramatically. This may be a function of the low expectation of widespread Zika expansion in particular jurisdictions, ongoing reductions in public health resources, including for essential surveillance, prevention and control functions, or the relatively low prevalence of infant complications and birth defects, like microcephaly. Regardless of the reasons for variation, the CDC provides technical assistance to any jurisdictions requesting it, and staff members expect the planning process to continue to expand across all jurisdictions.[xxvii]

Two states with extensive web-based Zika planning and action information are Florida and South Carolina. The Florida Department of Health Zika website provides daily updates on cases being investigated by location as well as information on Zika testing and monitoring for pregnant women. As of August 30, 2016, 78 pregnant women with Zika involvement were being followed. In addition, Florida's DOH established a Zika Virus Information Hotline to provide free phone access for the general public, and the *Miami Herald* maps the advance of the Zika virus in Florida through its online Daily Florida Zika Virus Tracker.

The South Carolina Department of Health and Environmental Control (DHEC) provides an extensive website with mapping of cases by county updated monthly, an updated fact sheet on Zika Virus Planning and Response Efforts, a free public DHEC "Careline," and an extensive set of outreach and education resources in the Zika Toolkit, including fact sheets, infographics and public service announcements for local government as well as the general public.

Limited state plan connections to other services. State plans concentrate on action within the public domain yet very few focus on building connections with other essential programs that will likely be engaged with Zika-vulnerable or Zika-infected individuals. These sectors include early intervention, child care settings, and social, mental health and economic supports for families with infants or others experiencing the neurologic and health abnormalities that result from Zika infection.

As one example of attention to this important component of Zika-preparedness (i.e., connecting essential public services), the California Department of Health and Human Services' fact sheet, Zika Questions and Answers, reports that, "Local health departments and CDPH are working together to actively monitor cases of pregnant women diagnosed with Zika virus disease. For infants born to Zika-affected mothers, health care providers monitor the child's health over time and local health departments and other agencies provide assistance and referrals for additional medical care, early intervention services, and social support to the family, as needed."[xxviii]

Inadequate attention to Zika risks arising from predictable family travel between the mainland US and its territories. The CDC continues to issue stern travel warnings and information about Zika is more widely available at ports of departure (including airports), however, it is likely that families will continue traveling to visit their families in US territories. Given the dramatic increase in reported Zika cases in the US territories, including Puerto Rico, the number of individuals returning to mainland US as carriers of the Zika virus may be much higher than we are now predicting.

Part III: Cross Sector Guidance for Early Childhood Services

IMPACT ON CHILD CARE PROVIDERS

What does all of this mean for child care programs? Simply put, focus on prevention! As stated earlier, the mosquitos that spread the Zika virus are “aggressive daytime biters.” With children playing outdoors during daytime hours spent in child care, there is risk for exposure. Prevention and protection are critical at all hours of the day in areas where mosquitos are known to carry the virus. In addition, diligence should be given in areas where adult caregivers travel to and from high incidence areas.

Child care programs should be aware of their state licensure regulations which may prohibit or restrict the application of insect repellants by child care staff. Some states may prohibit child care programs from applying even topical creams or sprays, including insect repellants. As with all aspects of health and safety, child care centers and family child care homes should be familiar with their own specific state regulations.

> Child care providers must be aware of state licensure regulations as some states prohibit or restrict the application of insect repellants by child care staff.

For example, child care licensing regulations for New York state allow -- with an approved health care plan in place -- for child care staff to apply “over-the-counter topical ointments, lotions and creams, sprays, including sunscreen products and topically applied insect repellant.” [xxix] The state of Florida allows for application of insect repellants by child care staff, providing the parent has given detailed written permission and properly labeled the lotion or spray meeting detailed licensure requirements. California [xxx] previously issued guidance around the application of insect repellant along with a parent permission form for the use of repellants.

Other guidance is similar to that generally recommended for homes and businesses in all communities: removing sources of standing water (in child care, sand box covers and low lying areas of the playground are likely sources of water collection); keeping windows and doors shut, or ensuring they have screens in place; avoiding dark and damp areas where mosquitos may be (around plant growth, under playground structures, etc.); and encouraging parents to dress their children in clothing that covers their legs and arms.

The CDC recommends that child care programs and schools: [xxxi]

- Proactively communicate with public health authorities and families about preventing mosquito transmission.
- Manage symptoms according to school illness policies. While privacy should be maintained, do not remove or isolate Zika-infected students or staff members or issue schoolwide notification.
- Even if transmission is occurring in the community, it is not necessary to cancel classes or outdoor activities. However, child care directors and staff managers may need to consider that staff who are pregnant or trying to conceive may request their time outdoors be limited.

CONSIDERATIONS FOR EARLY INTERVENTION (B-3) PROGRAMS

> A multi-disciplinary team should be convened to ensure care coordination and appropriate medical care for infants affected by the Zika virus.

Caring for an infant affected by the Zika virus requires practices similar to those followed to support the growth and development of any child with an identified congenital abnormality or developmental delay. Upon referral and acceptance, a multi-disciplinary team should be convened to help ensure care coordination and appropriate medical care. The CDC recommends [xxxii] that infants receive "routine preventive pediatric health care, including regularly scheduled immunizations." In support of the family, information should be provided on the possible implications of the Zika infection on the infant's development. Ongoing standardized growth measures should be conducted throughout the infant's first year.

Because initial feeding difficulties may occur as part of the constellation of Zika challenges, the infant's earliest medical professionals should assess the infant for indication of feeding difficulties. Should any issues be identified, a referral should be made for lactation consultation, with potential occupational, speech, and nutrition therapies as needed in the future.

A neurology referral should be made to assess any abnormalities, including sleeping problems or excessive irritability. As with all infants, newborn hearing and vision screenings should also be completed. Guidance from the CDC recommends a neurologic examination as well as a visit with the primary care provider at one month of age, followed by a second evaluation at the infant's second month and as recommended following the second-month visit.

A referral for early intervention services should occur as soon as possible, with ongoing assessment of the child's development using standardized assessment and screening tools since some neurological effects such as seizures, cognitive delay, and vision or hearing impairments may have delayed onset.

SUPPORTING FAMILIES

Families caring for infants and young children with significant medical or developmental needs require support as well. Increased levels of depression and anxiety are not uncommon among parents and other primary caregivers. In addition, families often face significant financial burdens associated with the ongoing treatment and assessment of the infant's needs. Social stigmas and perceived isolation are also common challenges faced by many families. Families of a Zika-affected infant or young child may have limited access to needed heath care services if language or cultural barriers also exist. Information about, and access to, local support services and resources for families caring for infants with complex medical diagnosis and needs should be given.

Supports provided through early intervention must be planned and executed with the whole family in mind. As the one constant in a child's life, families are essential to effective planning for services and tracking outcomes. Importantly, it is not enough to simply invite family members to the planning table: a true family-professional partnership is critical to meet the needs of both the child and the caregivers.

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Families of infants with microcephaly will have unique needs and will require supports and strategies that are different even from families caring for young children with developmental disabilities, beginning with the most basic areas of caregiving and feeding. Early intervention supports must meet these families where they are and understand that shared planning and ongoing support is essential, especially for those with medically fragile children. Many families "alter how their family works" in order to meet the developmental, medical, and physical needs of their child with a disability while also meeting the needs of the rest of the family. [xxxiii] Effective intervention supports can help prevent families from significantly changing their routine, tying developmental activities with routines-based practices the family is already doing.

TALKING WITH KIDS ABOUT ZIKA

Older children may hear news reports about Zika and grow concerned. It is always important to share information with children that is tailored to their concern and considerate of their developmental level. Building a sense of self and independence is important at an early age, and even young children can be encouraged to help prevent the spread of Zika. Sesame Street and the CDC have issued developmentally appropriate resources that child care programs can share with parents and include as part of the center's health and safety curriculum.

WHAT ELSE CAN YOU DO AS A PROFESSIONAL AND CITIZEN?

Providers, professionals and human service agencies should be proactive about coordinating with the public health Zika Action Planning efforts. If your state or local jurisdiction does not have a Zika Action Plan or a Communications Task Force, help to create one. Through the Communications Task Force, refer community members to online Zika websites and disseminate information about Zika prevention and Zika awareness with early childhood providers, early intervention providers and school districts through normal and specially-created communication channels.

Engage with professional and community organizations, participate in (or support) the review of state policies, especially those that may have a negative impact on necessary prevention strategies to address the Zika virus in your community, county or state. One example where review of licensure regulations may be needed concerns the use of insect repellants on the grounds of educational and other settings, and the application of insect repellants to individual children by child care or educational staff.

Share information and training about microcephaly and other congenital abnormalities that can result from Zika infection and promote best practices guiding the delivery of developmental supports and interventions for infected children and their families. This work can effectively be undertaken within the early invention sector as well as within the obstetrics and health care delivery systems.

CONCLUSION

The Zika virus has gained worldwide attention during the past year as reported cases of Zika-infected individuals across the mainland U.S. and its territories—including Puerto Rico, which has the largest number of known cases in US territories, according to recent CDC reports—continue to increase. Despite this attention, and the resulting concern of substantial health and economic impact, our research revealed (surprisingly) few examples of coordination between human service agencies and public health efforts around Zika-preparedness. Human services agencies will be charged with supporting and assisting individuals and children affected by Zika in the coming years; therefore, attention must be paid to connecting these public agencies and programs with health planning efforts, including Zika Action Plans at the state and local levels. Based on our preliminary observations of Zika planning across states, many opportunities exist for collaboration between public sector programs, providers and government to better prepare for managing Zika's impact on affected individuals and families across the US and its territories.

RESOURCES AND REFERENCES

State	Links to State Zika Action Planning and Information	State Plan (Y/N)
Alabama	http://www.adph.org/mosquito/index.asp?id=7427	
Arizona	http://azdhs.gov/preparedness/epidemiology-disease-control/mosquito-borne/index.php#zika-home	
Arkansas	http://www.healthy.arkansas.gov/programsServices/infectiousDisease/zoonoticDisease/zika/Pages/default.aspx	
California	https://www.cdph.ca.gov/HealthInfo/discond/Documents/CAZikaResponseActivitiesandResources.pdf	Y
Colorado	https://www.colorado.gov/pacific/cdphe/zika	
Connecticut	http://www.ct.gov/dph/lib/dph/infectious_diseases/zikavirus/plan_revised_08-19-2016.pdf	Y
Delaware	http://dhss.delaware.gov/dhss/dph/zika.html	
District of Columbia	http://doh.dc.gov/publication/zika-virus-information	
Florida	http://www.floridahealth.gov/diseases-and-conditions/zika-virus/index.html	
Georgia	https://dph.georgia.gov/zika	
Hawaii	http://www.cdc.gov/zika/pdfs/zika-draft-interim-conus-plan.pdf	Y
Idaho	http://healthandwelfare.idaho.gov/Portals/0/Health/Epi/FAQ_Zika%20Virus%20and%20Mosquitoes%20in%20Idaho_FINAL.pdf	
Illinois	http://www.dph.illinois.gov/sites/default/files/ZVAP%20-%20Updates%20Aug%202016%20Final_0.pdf	
Indiana	http://in.gov/isdh/26910.htm	
Iowa	https://idph.iowa.gov/ehi/zika	

Kansas	http://www.kdheks.gov/zika/	
Kentucky	https://louisvilleky.gov/sites/default/files/health_and_wellness/environmental/mosquitos/zika_action_plan_final_06132016.pdf	Y
Louisiana	http://www.dhh.louisiana.gov/index.cfm/page/2478	
Maine	http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/zika/	
Maryland	http://mda.maryland.gov/plants-pests/Pages/Zika.aspx	
Massachusetts	http://www.mass.gov/eohhs/docs/dph/cdc/factsheets/v-z/zika-factsheet.pdf	Y
Michigan	http://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692-382158--,00.html	
Minnesota	http://www.health.state.mn.us/han/2016/jan27zika.pdf	Y
Mississippi	http://www.msdh.state.ms.us/msdhsite/_static/14,0,399.html	
Missouri	http://health.mo.gov/living/healthcondiseases/communicable/zika/	
Montana	http://dphhs.mt.gov/publichealth/cdepi/diseases/ZikaVirus	
Nebraska	http://dhhs.ne.gov/publichealth/CDC/Pages/ZikaVirus.aspx	
Nevada	http://dem.nv.gov/Resources/Zika_Virus/	
New Hampshire	http://www.dhhs.nh.gov/dphs/cdcs/zika/	
New Jersey	http://www.nj.gov/health/cd/zika/index.shtml	
New Mexico	https://nmhealth.org/publication/view/plan/2230/	Y
New York	https://www.ny.gov/6-step-new-york-state-zika-action-plan/6-step-new-york-state-zika-action-plan	Y

North Carolina	http://mobile.ncleg.net/documentsites/committees/JLEMOC/2015-2016%20Interim/April%2014,%202016/Update%20on%20the%20Zika%20Virus.pdf	Y
North Dakota	https://www.ndhealth.gov/disease/zika/	
Ohio	https://www.odh.ohio.gov/odhprograms/bid/zdp/diseases/zika.aspx	
Oklahoma	https://www.ok.gov/health/Disease,_Prevention,_Preparedness/Acute_Disease_Service/Disease_Information/Zika_Virus.html	
Oregon	https://public.health.oregon.gov/DiseasesConditions/DiseasesAZ/Zika/Pages/index.aspx	
Pennsylvania	http://www.health.pa.gov/My%20Health/Diseases%20and%20Conditions/U-Z/Zikavirus/Pages/ZikaVirusHomePage.aspx#.V-7ZD_krLIU	
Rhode Island	http://health.ri.gov/diseases/mosquitoes/?parm=147	
South Carolina	http://www.scdhec.gov/Health/DiseasesandConditions/InfectiousDiseases/InsectAnimalBorne/ZikaVirus/mindex.htm	
South Dakota	https://doh.sd.gov/diseases/Zika.aspx	
Tennessee	https://www.tn.gov/health/topic/zika-virus	
Texas	http://www.texaszika.org/docs/zika_plan.pdf	Y
Utah	http://health.utah.gov/epi/diseases/zika/	
Vermont	http://healthvermont.gov/prevent/arbovirus/zika/	
Virginia	http://www.vdh.virginia.gov/content/uploads/sites/3/2016/03/Virginia-State-Zika-Response-Plan.pdf	Y
Washington	http://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/ZikaVirus	
West Virginia	http://www.dhhr.wv.gov/oeps/disease/zoonosis/mosquito/documents/zika/WV-Zika-Action-Plan.pdf	Y
Wisconsin	https://www.dhs.wisconsin.gov/arboviral/zika.htm	Y

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[i] Zika Cases Reported in the US. Centers for Disease Control, undated. Retrieved September 7, 2016
[ii] Costs of Zika Among the Many Unknowns of the Virus, Modern Health Care. July 20, 2015
[iii] Zika Virus Fact Sheet, March of Dimes, March 2016
[iv]Members of this family belong to a single genus, *Flavivirus*, and cause widespread morbidity and mortality throughout the world. Some of the mosquitoes-transmitted viruses include: Yellow Fever, Dengue Fever, Japanese encephalitis, West Nile viruses, and Zika virus. Other *Flaviviruses* are transmitted by ticks and are responsible of encephalitis and hemorrhagic diseases: Tick-borne Encephalitis (TBE), Kyasanur Forest Disease (KFD) and Alkhurma disease, and Omsk hemorrhagic fever" CDC online. Retrieved August 29, 2016
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