

Zika Virus and other public health threats

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Zika Virus

- Zika update
- Other public health threats
 - Outbreaks
 - Measles, pertussis, novel influenza, Ebola, MERS, and many more...

Zika Virus

- Mosquito-borne emerging arbovirus
- Closely related to dengue, yellow fever, Japanese encephalitis and West Nile viruses
- First identified in Uganda in 1947
- Since 2007: Outbreaks in Gabon, Micronesia, French Polynesia
- Since 2015: Endemic transmission in Central & South America, Mexico & Caribbean

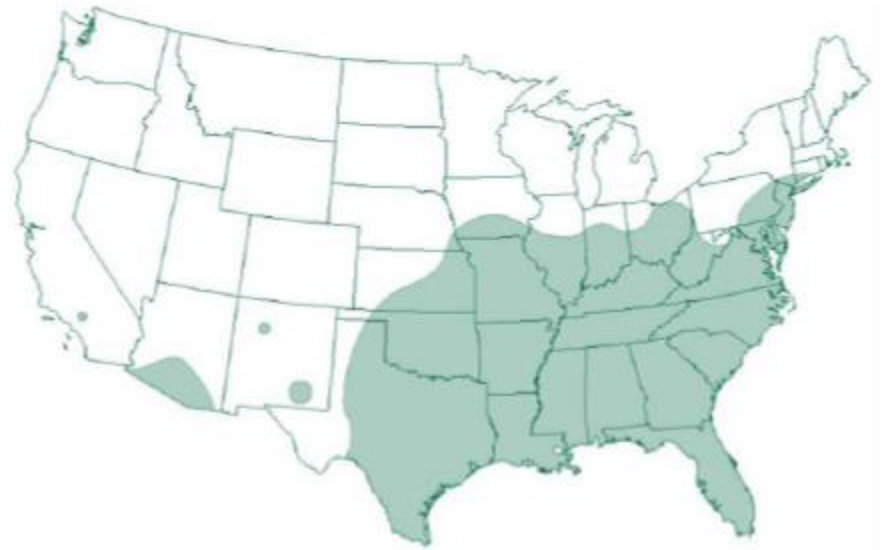
Vectors: *Aedes* mosquitos

- *Aedes species mosquitos*
 - Primary: *Ae aegypti*
 - Secondary: *Ae albopictus*
- Aggressive day-time biters
- Also transmit dengue and chikungunya viruses

Aedes aegypti and *Aedes albopictus* Mosquitoes: Geographic Distribution in the United States



Aedes aegypti



Aedes albopictus

Additional Modes of Transmission

- Spread from mother to baby probably by trans-placental transmission or during delivery when the mother is infected
- Sexual transmission noted in case reports
- Confirmed transmission of ZIKV from blood transfusion

Clinical features

- Illness starts 2–7 days after mosquito bite
- Most asymptomatic (60% to 80%)
- Symptoms usually mild—self-limiting febrile illness of 4–7 days duration
 - Rash, fever, joint/muscle pain, red eyes and headache
 - Low hospitalization rate



ZIKA VIRUS

What is Zika?

Zika is a virus transmitted by the *Aedes* mosquito, which also transmits dengue and chikungunya.

Zika can cause:



Mild fever



Conjunctivitis



Headache and joint pain



Skin rash



Onset is usually 2-7 days after the mosquito bite



1 in 4 people with Zika infection develops symptoms



A very small number of people can develop complications after becoming ill with the virus



Pan American
Health
Organization



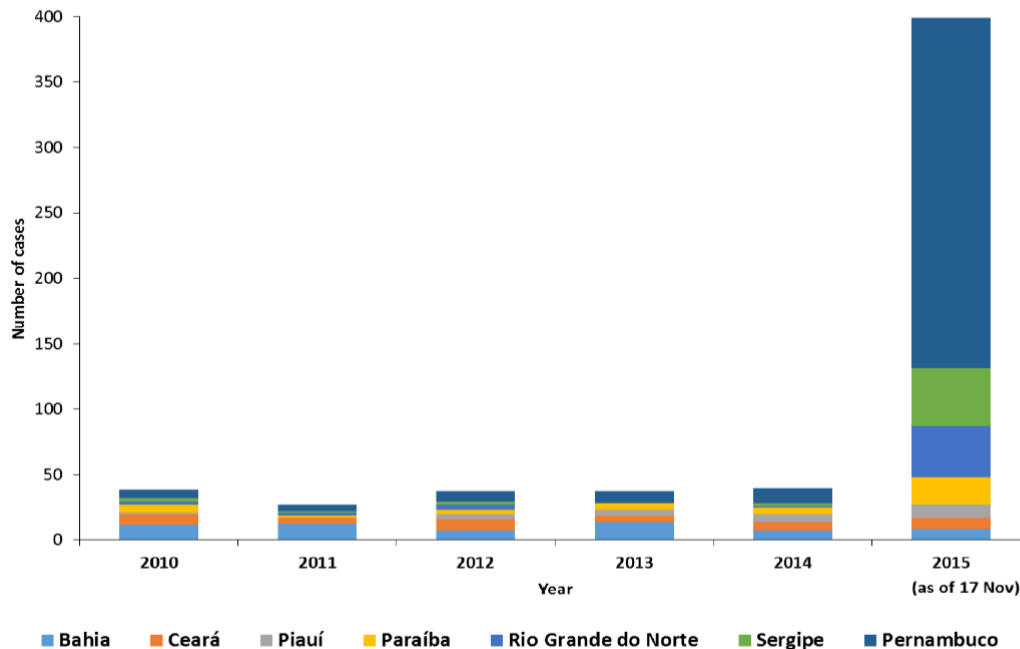
World Health
Organization
REGIONAL OFFICE FOR THE
Americas

#zika
#FightAedes
#ZikaVirus

www.paho.org/zikavirus

Zika in the Americas / Microcephaly

Figure 2. Number of cases of microcephaly reported annually in the seven Brazilian states reporting an unusual increase of microcephaly, 2010–2015



Jose Wesley, a Brazilian baby shown here on Dec. 23, 2015, was born with microcephaly. His mother was diagnosed with the Zika virus that researchers think may cause the birth defect.

(AP Photo/Felipe Dana)

ECDC Rapid Risk Assessment. Microcephaly in Brazil potentially linked to the Zika virus epidemic. 24 November 2015

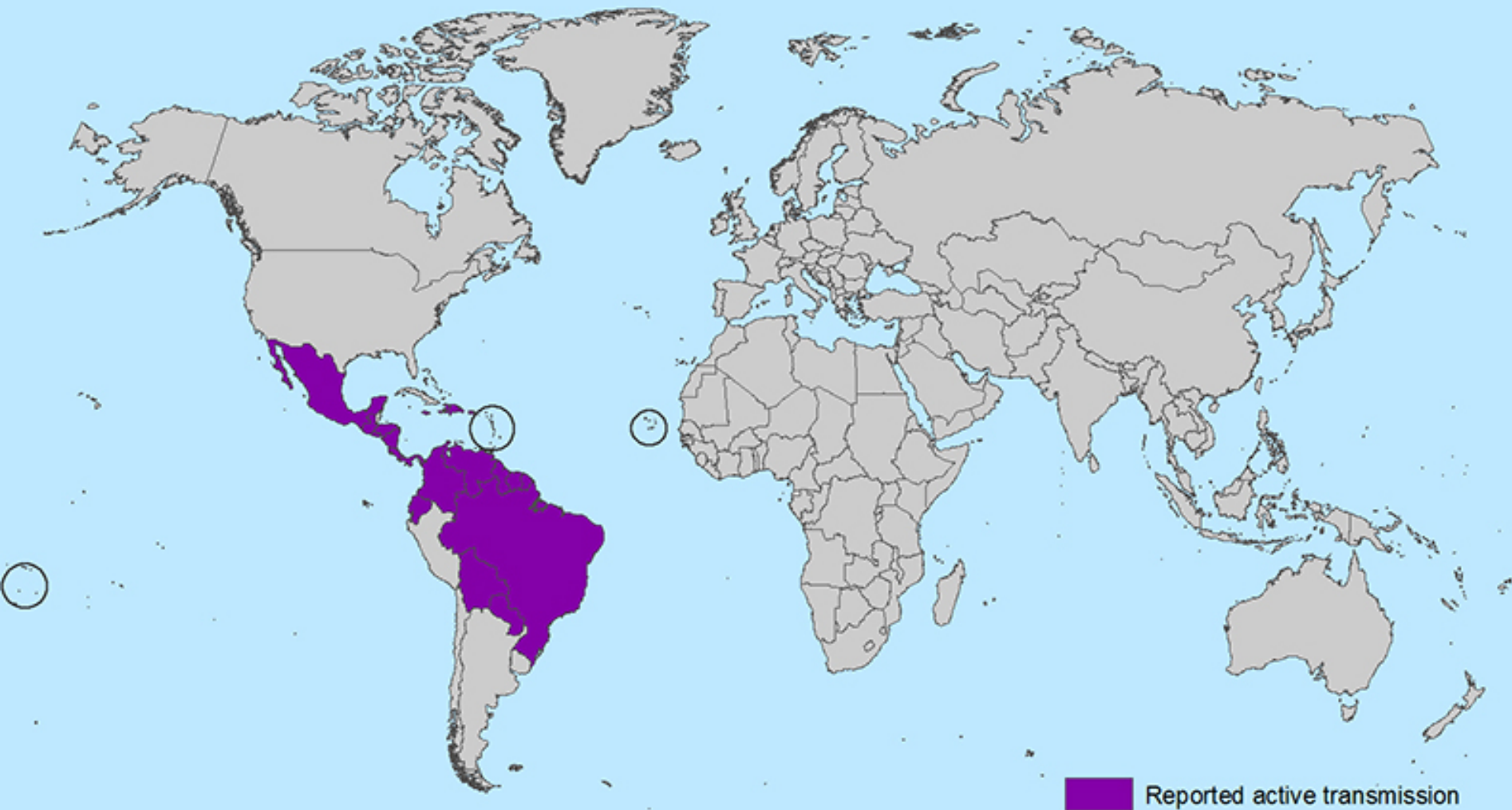
Zika Virus: Microcephaly in Brazil

- 4,180 cases reported October–January
 - 732 examined 462 (63%) not likely related
 - 270 (37%) potentially related
- Zika virus identified in amniotic fluid from a small number of cases involving microcephaly

CDC Health Alert, 15 Jan 16

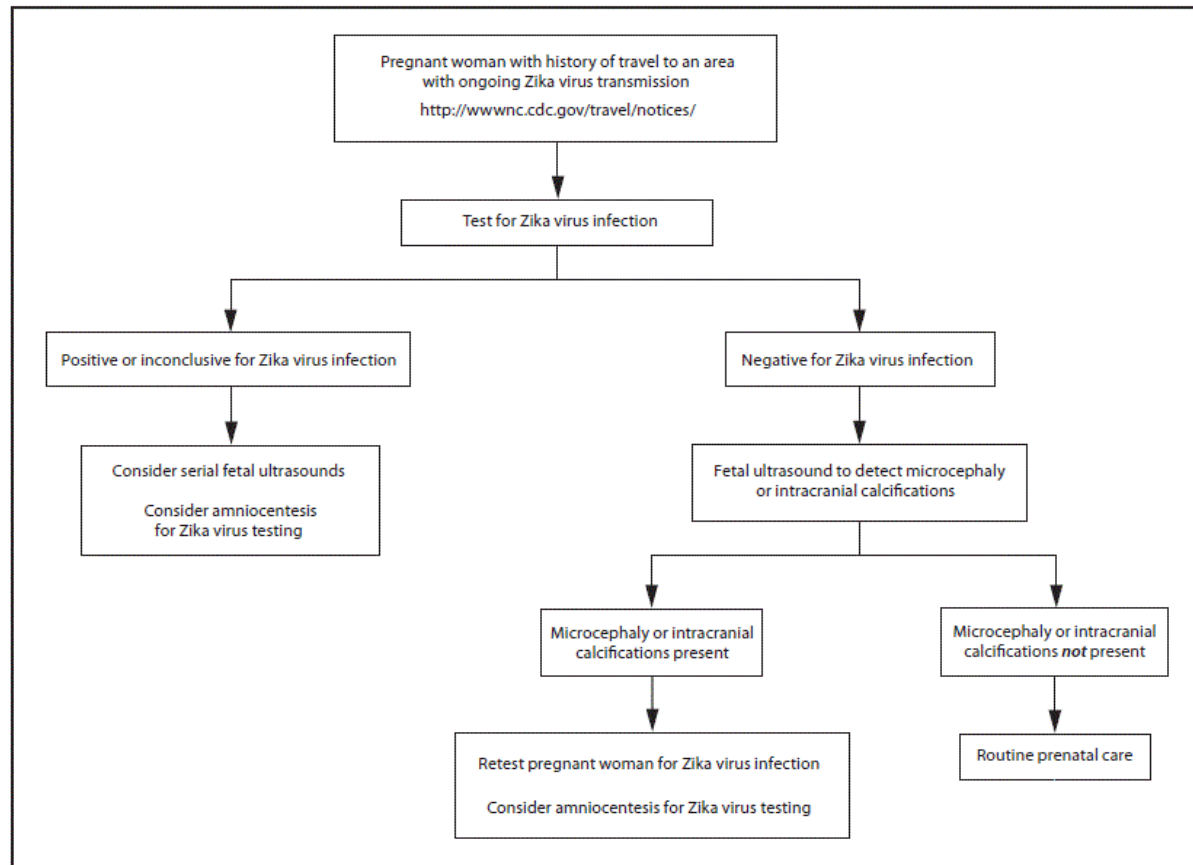
- Until more is known and out of an abundance of caution, pregnant women should consider postponing travel to any area where Zika virus transmission is ongoing.
- Pregnant women who do travel to these areas should talk to their doctors or other healthcare providers first and strictly follow steps to avoid mosquito bites during the trip.
- Women trying to become pregnant should consult with their healthcare providers before traveling to these areas and strictly follow steps to avoid mosquito bites during the trip.

Countries or territories with reported local transmission of Zika virus, February 2016



Interim Guidelines for Pregnant Women During a Zika Virus Outbreak — United States, 2016

- Recommendations for Pregnant Women with History of Travel to an Area of Zika Virus Transmission



What is NC public health doing?

- Public awareness
 - Travel recommendations
 - Sexual transmission precautions
 - Refrain from donating blood products
- Guidance for clinicians
- Testing through NCSLPH
- Case investigation
- Mosquito surveillance and control limited

Outbreaks



Outbreak Report Summary: 2012 - 2014



A total of 497 outbreaks were reported to the Communicable Disease Branch (CDB) from January 1, 2012–December 31, 2014; an average of 166 per year. Details of those outbreaks are presented below.

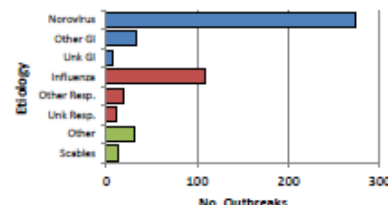
As required by North Carolina Administrative Code (10A NCAC 41A .0103), local health departments must submit a written report of the investigation within 30 days of the end of the outbreak. Outbreak reports were received for 78% of 2012 outbreaks, 91% of 2013 outbreaks and 61% of 2014 outbreaks. The median time to report receipt by the CDB from initial outbreak notification was 55 days in 2012, 27 days in 2013 and 129 days in 2014. While timeliness and completeness of reporting increased between 2012–2013, it decreased in 2014. This can be attributed to the burden of work that the global Ebola crisis placed on local programs.

TYPE AND ETIOLOGY

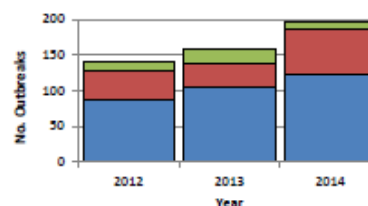
Type	Etiology	2012	2013	2014	Total	%
	Gastrointestinal (GI) Causes					
	Norovirus	80	90	104	274	87%
	Salmonella	3	5	5	13	4%
	Shigella	0	2	7	9	3%
	Other GI	4	4	3	11	4%
	Unknown	0	4	3	7	2%
	Total	87	105	122	314	
	Respiratory Causes					
	Influenza	29	23	57	109	78%
	Pertussis*	8	4	1	13	9%
	Legionella	0	0	5	5	4%
	Other Respiratory	1	0	0	1	1%
	Unknown	3	6	2	11	8%
	Total	41	33	65	139	
	Other Causes					
	Other	8	16	6	30	68%
	Scabies	5	5	4	14	32%
	Total	13	21	10	44	
Total Outbreaks		141	159	197	497	

*Pertussis was at epidemic levels in 2014, therefore individual outbreaks were not reported.

Outbreaks by Type and Etiology: 2012-2014

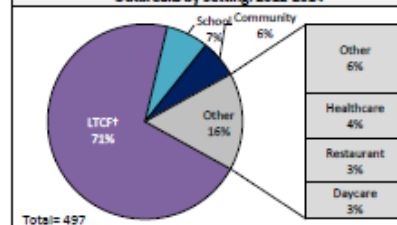


Outbreaks by Type and Year: 2012-2014



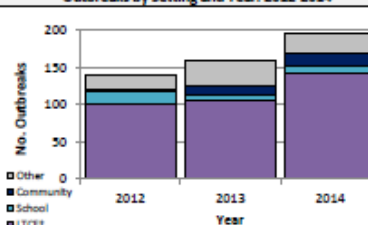
SETTING

Outbreaks by Setting: 2012-2014



*Long-term care facility (LTCF) includes nursing homes and adult care homes

Outbreaks by Setting and Year: 2012-2014

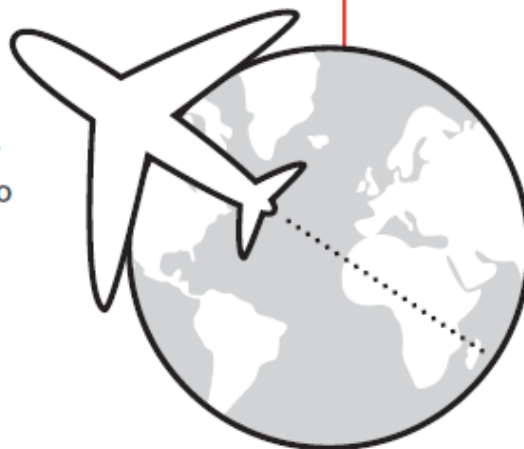


Other Public Health Threats

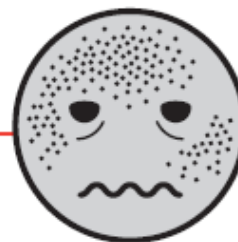
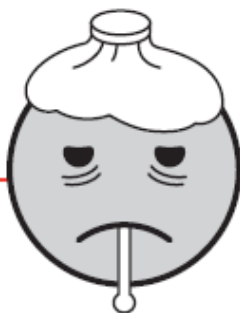
- Measles, pertussis
- Antibiotic-resistant organisms
- Novel influenza
- Ebola
- MERS
- Chikungunya...Zika...

IF YOU

recently **traveled internationally** or
had close contact with someone who
recently traveled internationally and
was ill,



AND YOU HAVE



fever, cough, trouble breathing, rash, vomiting or diarrhea,

PLEASE TELL STAFF IMMEDIATELY!

What does North Carolina Need to Handle These Threats

- Prepared workforce
 - Experienced and well-trained
 - Multiple disciplines
- Strong internal and external partnerships
 - NCDPS, NCDACS, NCDEQ, NCDOT...
 - Local, federal, public and private sector, academic
- Strong infrastructure
 - Local Health Departments, IT, Laboratory, Communications, Environmental Health Services, Vector Control

Zika Virus and Other Public Health Threats

Thank you for your attention and your commitment to the health and safety of all the people in North Carolina.

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