Council on Infectious Disease Preparedness and Response

March 4, 2016
9:00-11:00 AM

Arizona Department of Health Services

Health and Wellness for all Arizonans

Agenda

- Call to Order
- Welcome and Introductions
- Review September minutes
- Zika Updates
- Discussion of Zika preparedness
- Call to Public

Council Members

9:00-9:10 am

WELCOME AND INTRODUCTIONS

Council Members

9:10-9:25 am

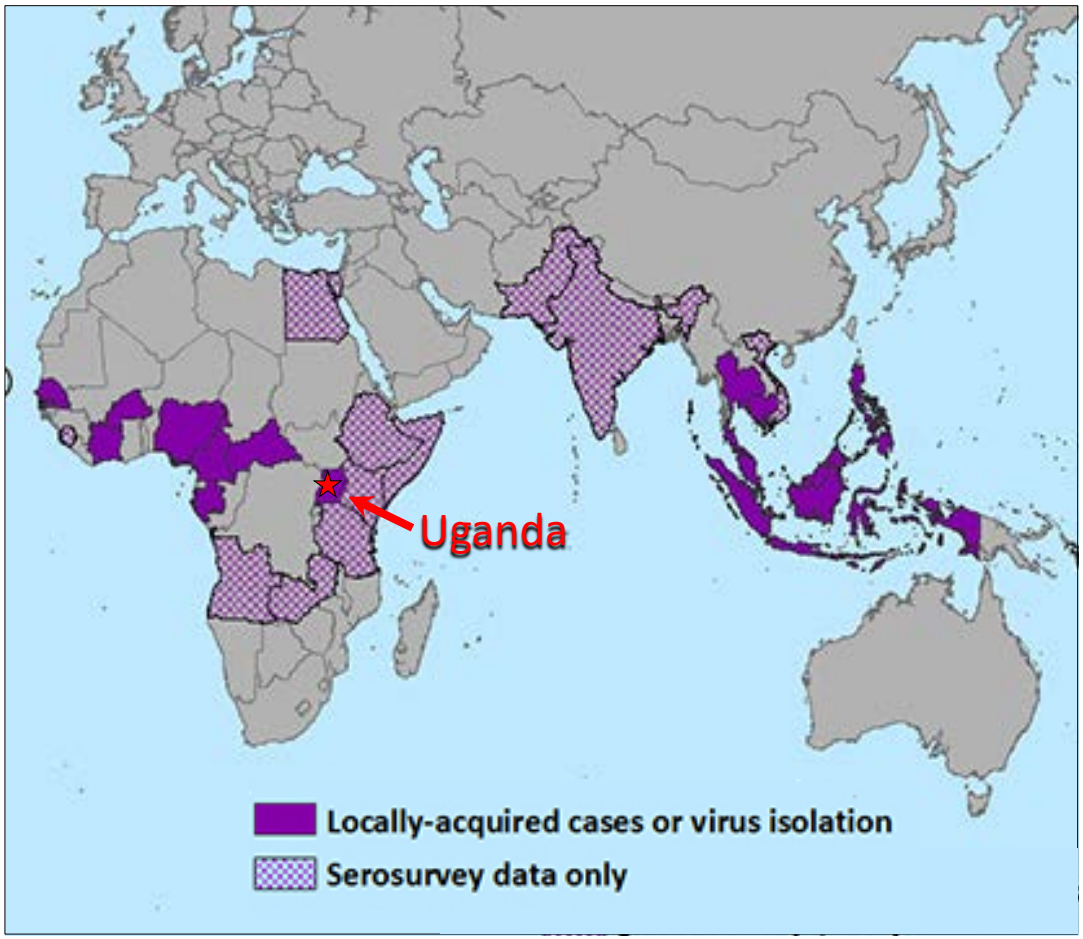
REVIEW SEPTEMBER MINUTES

9:25-10:15 am

ZIKA UPDATES

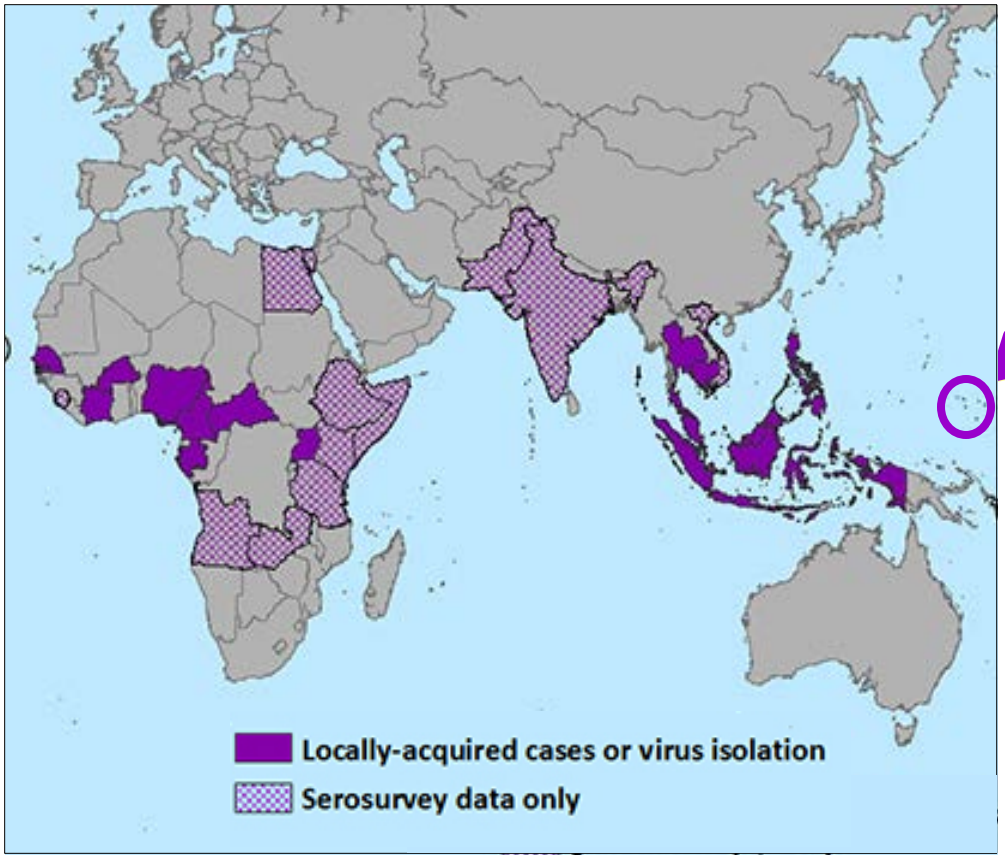
Zika Situational Overview

Zika Virus: 1947–2006



- Serologic evidence in multiple African & Asian countries
- Only 14 human cases documented

2007: Yap, Micronesia



- Estimated ~75% of population infected
- Only 20% experienced symptoms (~900 people)

2013–2014:
Continued Spread in Pacific Islands

- French Polynesia
- New Caledonia
- Cook Islands
- Vanuatu
- Fiji
- Solomon Islands
- Easter Island

2015: Brazil

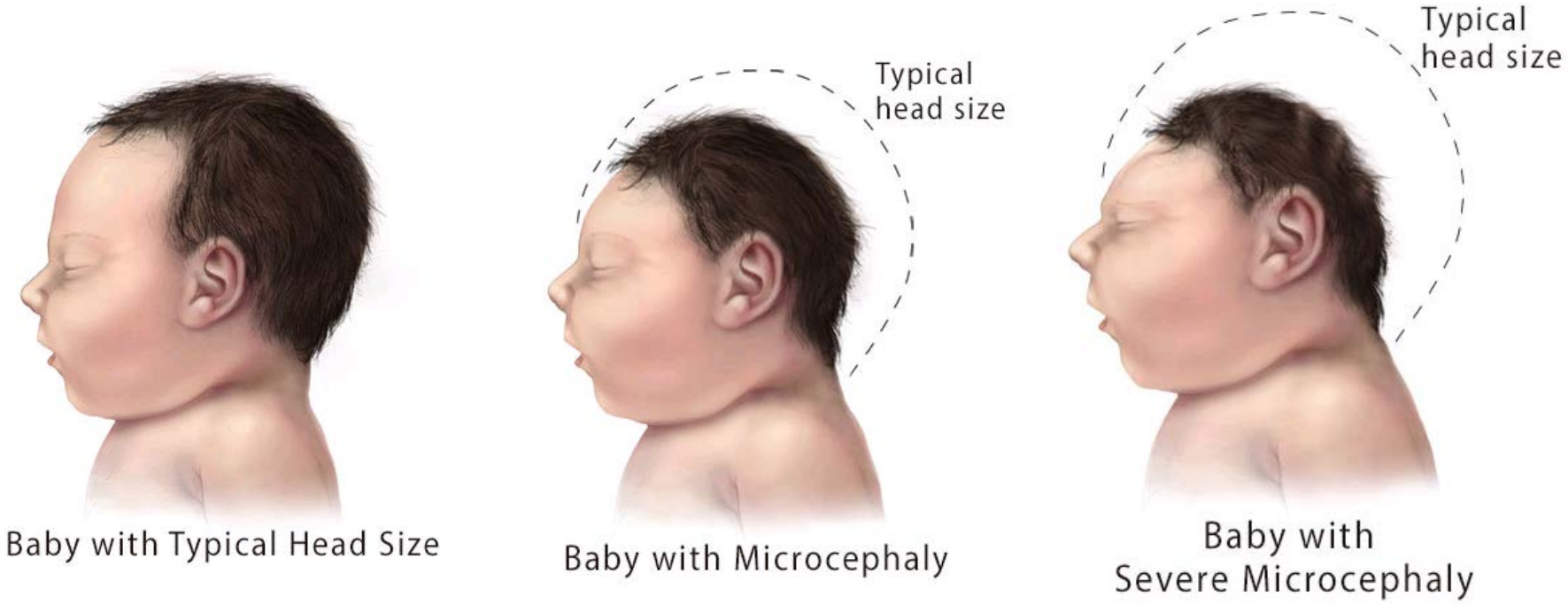
- May: first detected cases
- May–July: Increase in Guillain-Barre cases in NE states (121 cases)
- Dec: spread to >18 states

March 2016: >30 countries or territories with local Zika transmission

Microcephaly Investigation

- Late 2015: increase in microcephaly cases in Brazilian states (>5000 cases)
- Retrospective identification of microcephaly cases in French Polynesia

Congenital Microcephaly



Pregnant Women: Consider Postponing Travel to Zika-Affected Areas

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Guillain-Barre Syndrome (GBS)

- Rare disorder
- Immune system causes damage to nerve cells → muscle weakness or paralysis
- Can occur after bacterial or viral infection
  - Ex: *Campylobacter jejuni*, cytomegalovirus, Epstein Barr

Guillain-Barre Syndrome & Zika Virus

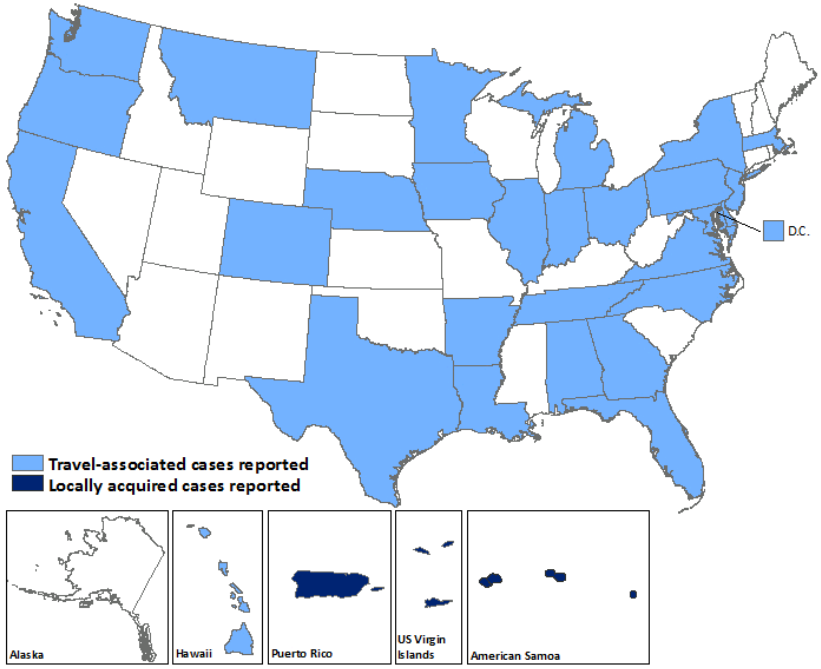
- 8 countries or territories reported increased incidence of GBS or laboratory confirmation of Zika virus infection among GBS cases

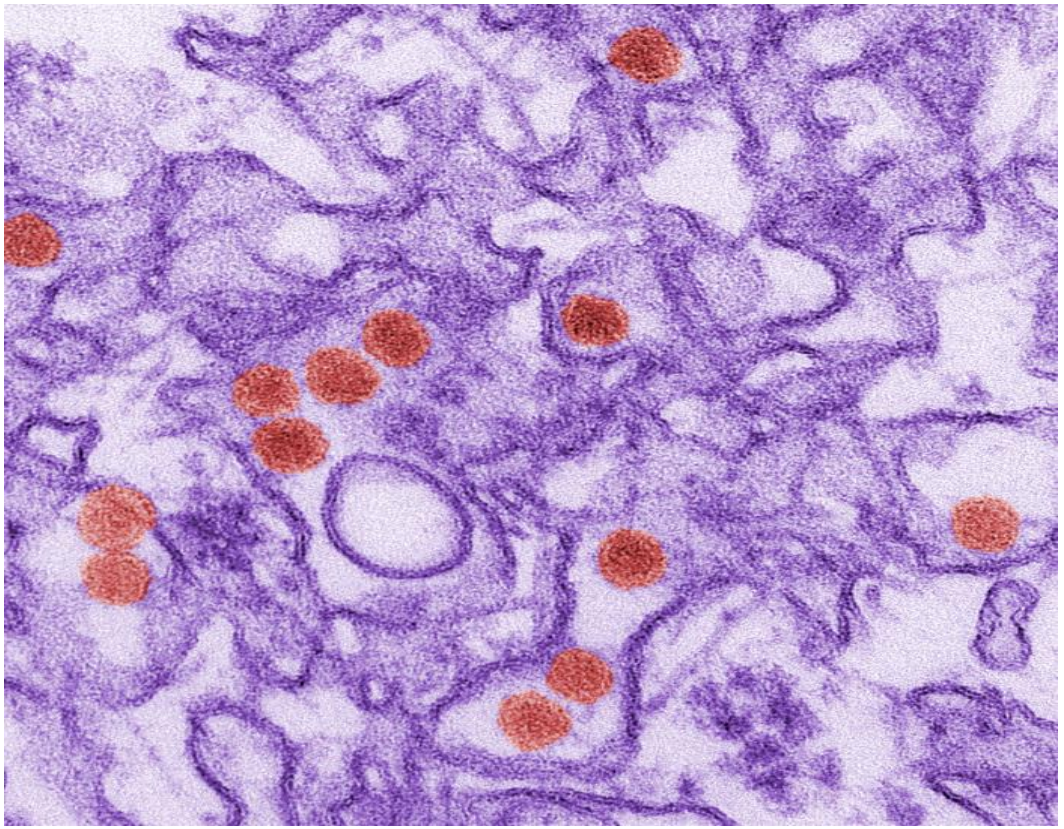
U.S. Zika Cases as of March 2nd

- US States
  - 153 travel-associated Zika cases
    - No locally acquired mosquito-borne cases
    - 14 suspected cases through sexual contact
- US Territories
  - 107 locally acquired cases

Arizona Zika Numbers as of March 3rd, 2016

- NO travel-associated or locally-acquired cases
- Persons have been tested from 5 AZ counties
- Most testing for pregnant women





ZIKA CLINICAL REVIEW

Arizona Department of Health Services

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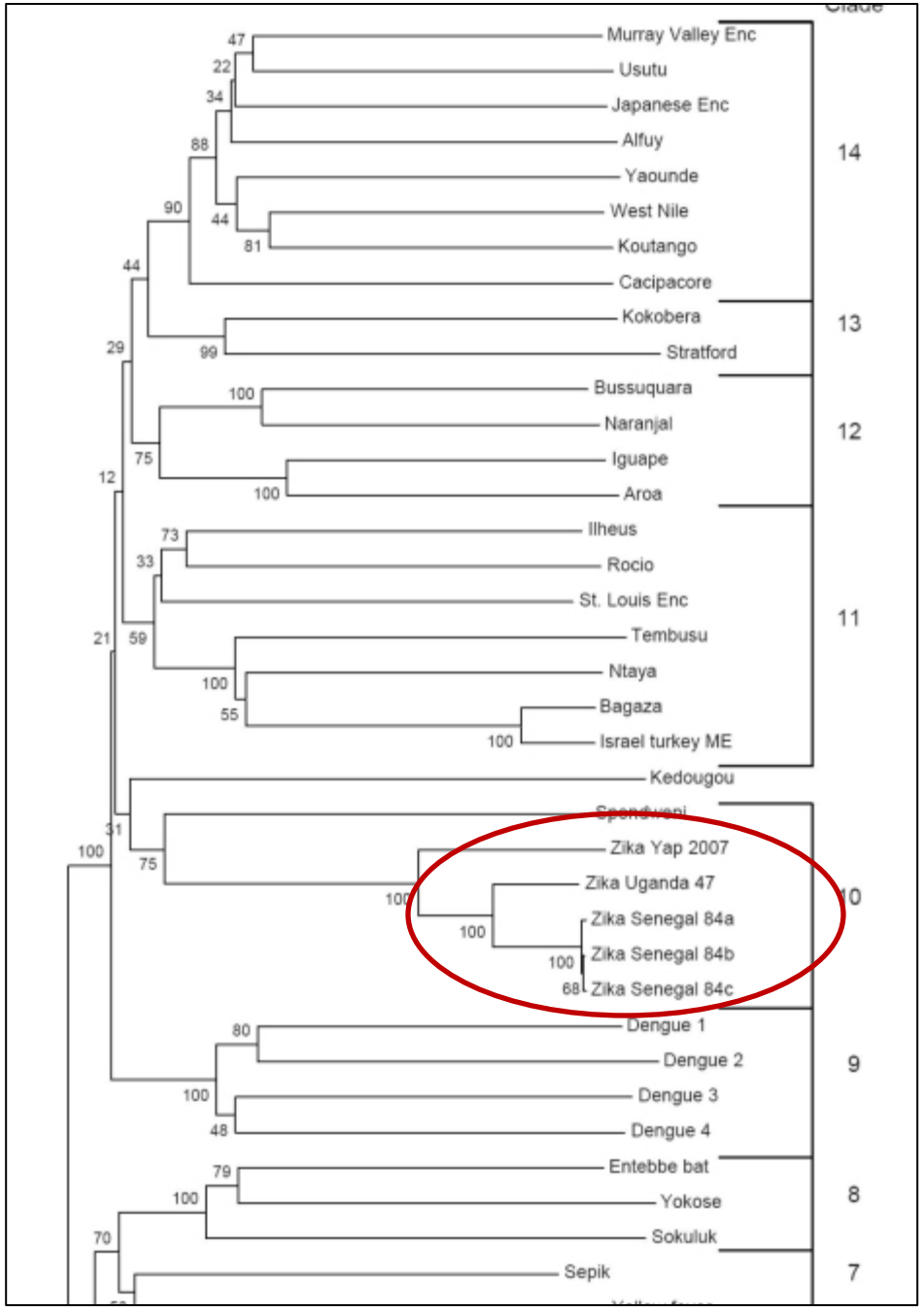
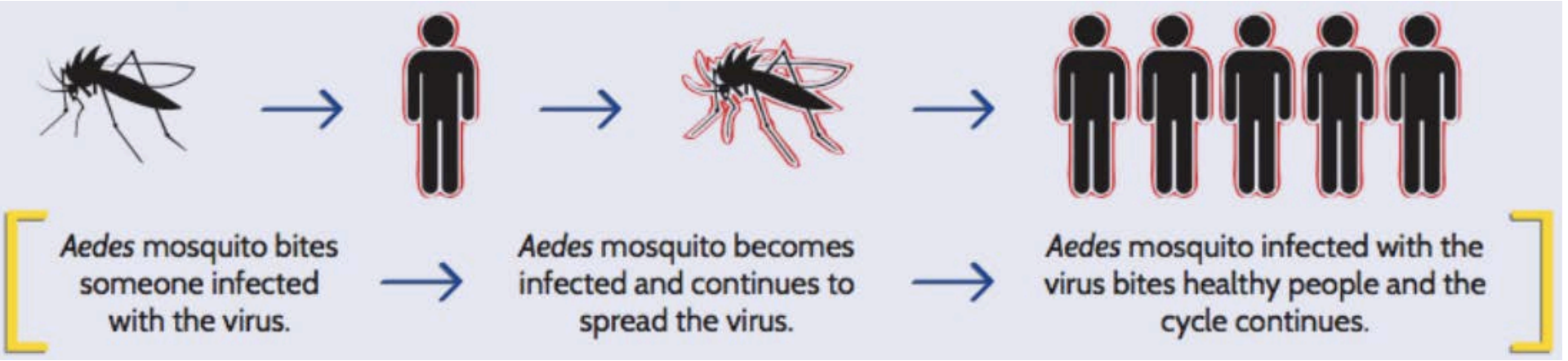


Zika is a Flavivirus

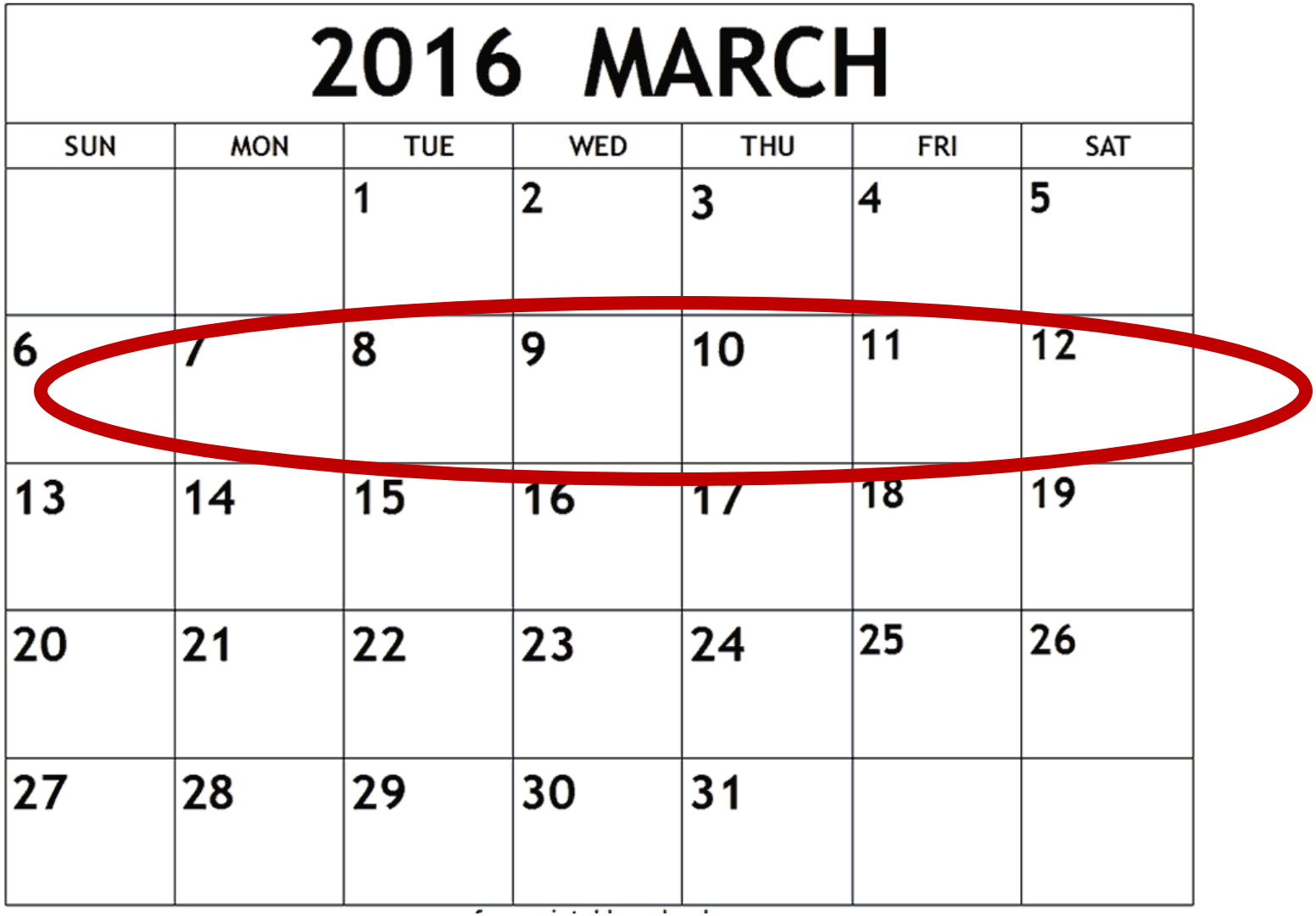
- Closely related viruses:
  - **Dengue**
  - Yellow fever
  - West Nile
  - St. Louis encephalitis
  - Japanese encephalitis

Transmission

- **<u>Primarily mosquito-borne</u>**
- Congenital or perinatal
- Sexual transmission
- Possible transfusion-associated



Incubation Period: ~1 Week



- 60–80% of infections asymptomatic

Zika Symptoms

Conjunctivitis

Muscle & Joint Pain

Fever, headache, eye pain

Zika Rash:
Up to 90% of Symptomatic Cases

Differential Diagnosis

- Dengue
- Chikungunya (alphaviruses)
- Leptospirosis
- Malaria
- Rickettsia
- Group A streptococcus
- Rubella
- Measles
- Parvovirus
- Enterovirus
- Adenovirus

Zika Testing

- Performed only at public health laboratories
  - Viral RNA
  - IgM antibodies
    - Cross-reaction with other flaviviruses

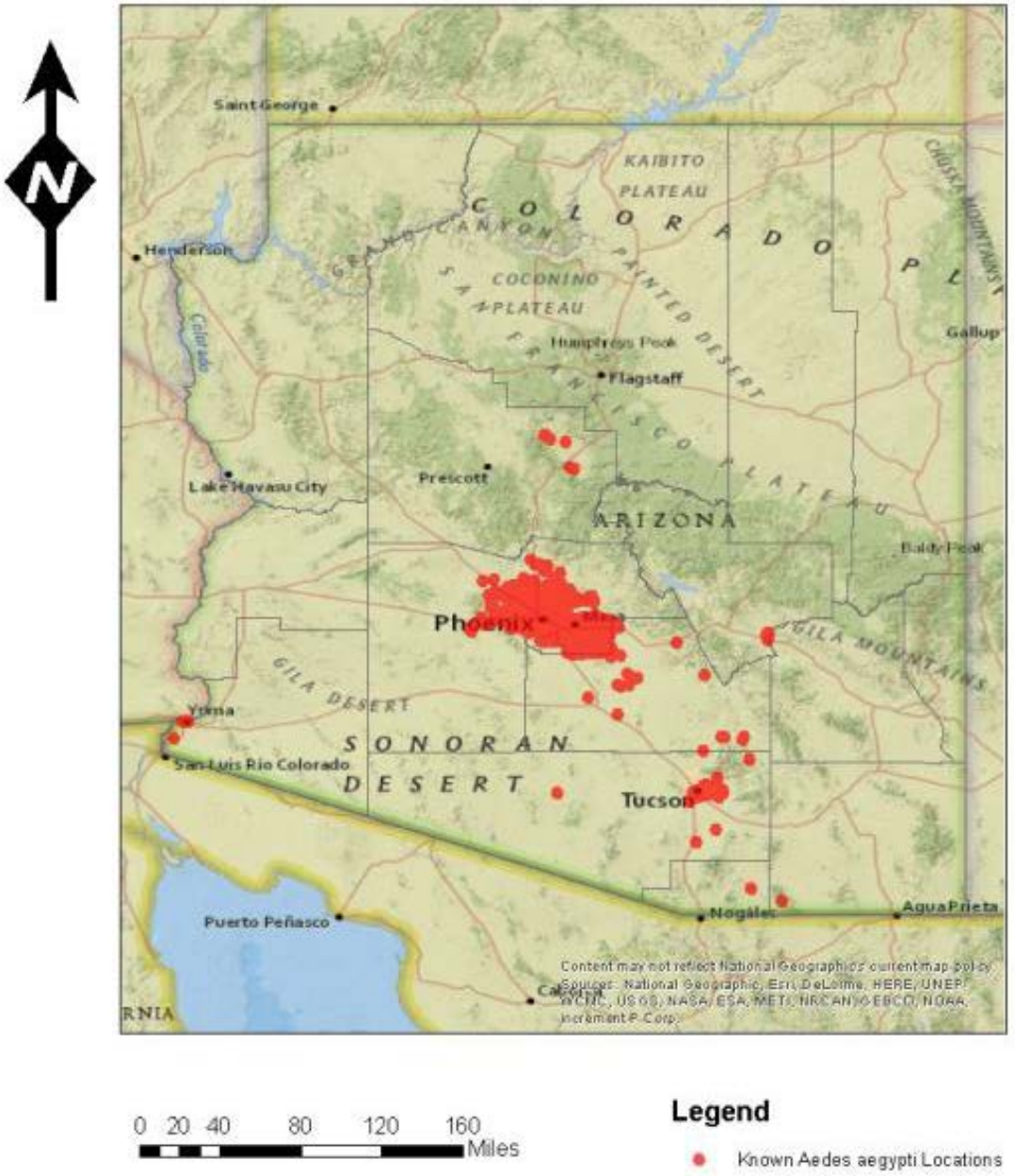
Prevention

- No vaccine or specific treatment
- Supportive care
  - Treatment with aspirin and NSAIDs discouraged
- Avoid mosquitoes

Zika Vector Mosquitoes

- Some *Aedes* species
  - –*Aedes aegypti* present in Arizona

Aedes aegypti identification in Arizona, 2015



Aedes aegypti

- Prefer to feed on humans
- Daytime biters
- Lay eggs in water-holding containers

Aedes aegypti also Transmit Dengue & Chikungunya Viruses

Cover, turn over, throw away, or regularly clean water-holding containers

Personal Protection

- Use AC or screens in home
- Wear insect repellant
  - Follow label instructions

ARIZONA CURRENT ACTIVITIES

Maintain Situational Awareness

- Closely follow national and international Zika updates
- Ensure that new information is shared with state and local partners

Zika Risk Map in Mexico

Daily Activities

Respond to Zika inquiries from the public, healthcare providers, and local health departments

Investigate suspected Zika cases

Coordinate Zika testing with local, state, and CDC laboratories

Arizona State Public Health Laboratory Zika Testing Capacity

- Zika RT-PCR testing validated
- IgM serologic testing pending

Information Sharing with Partners

- Folders for educational materials and updates
  - Talking points
  - Algorithms
  - Test interpretation guidelines
- Conference calls & presentations

Mosquito Surveillance & Control

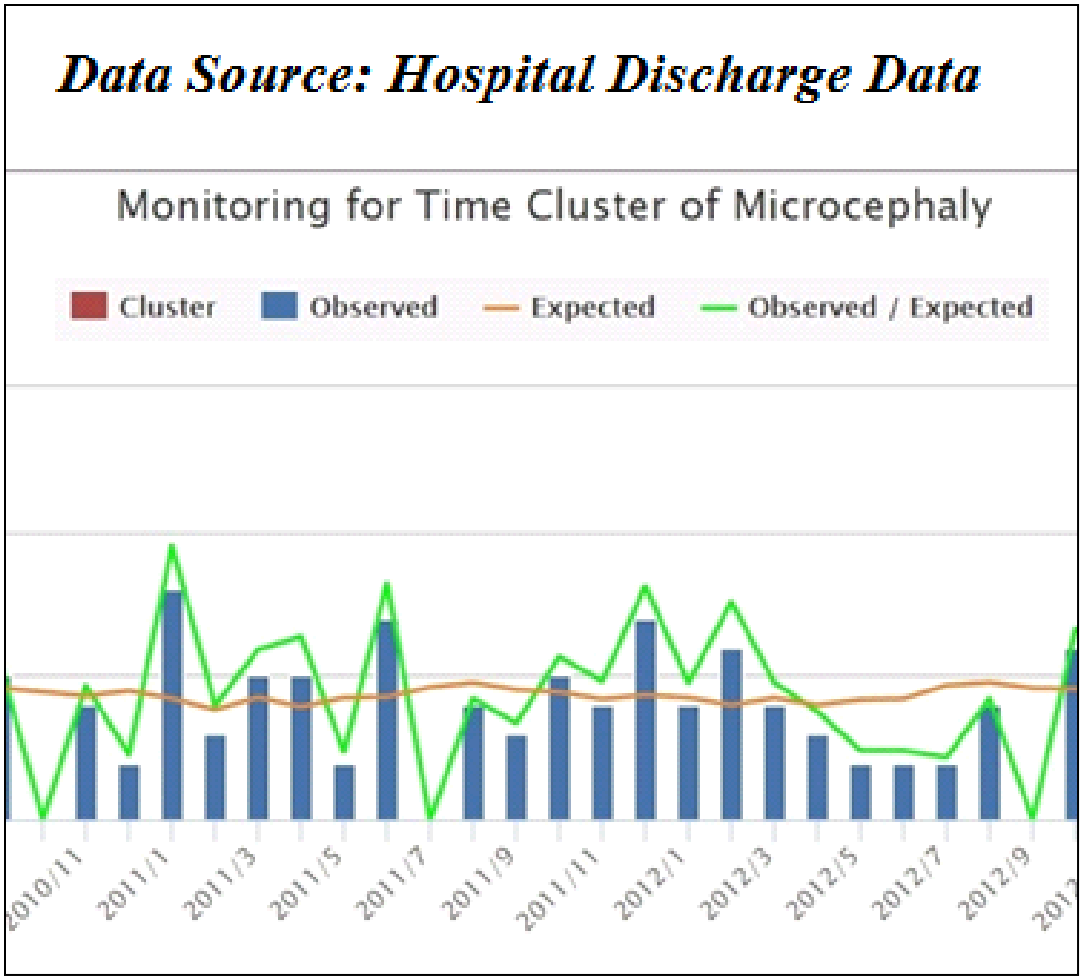
- Monthly Arizona Arboviral Workgroup meetings
- Enhanced *Aedes aegypti* surveillance since early 2015
  - Provided supplies for *Ae. aegypti* surveillance
  - Conducted statewide and border region oviposition trap projects (Great Arizona Mosquito Hunt)

Healthcare Provider Outreach & Education

- Health Alert Network messages
- Messaging to travel medicine providers
- Messaging to OBGYN, family medicine, pediatricians, and midwives
- Prenatal care provider FAQs

Microcephaly Surveillance & Tracking

- Determined Arizona baseline microcephaly rates



Coordination for Zika Registry & Follow-Up

- Collaboration between ADHS infectious disease, birth defects, and maternal & child health offices, as well as local partners
- Ensure access to care and longitudinal follow-up of pregnant women with Zika infection

ARIZONA PUBLIC HEALTH RESPONSE PLANS

Arizona Department of Health Services

Health and Wellness for all Arizonans

azhealth.gov/mosquito

Arizona Department of Health Services

ARIZONA ARBOVIRAL HANDBOOK FOR CHIKUNGUNYA, DENGUE, & ZIKA VIRUSES

3/3/2016

Arizona Department of Health Services

Arizona Arboviral Handbook

- Intended for use by public health, vector control, and healthcare partners
- Clinical information
- Surveillance and response
- Response scenarios
  - Overview and specific sections for public health, vector control, and communication

Scenario 1: Risk for Imported Cases

- Low Risk
  - *Aedes aegypti* or *Aedes albopictus* mosquitoes not present in area
  - Few imported cases of dengue, chikungunya, or dengue virus
- Elevated Risk
  - *Aedes aegypti* present in area
  - High numbers of imported chikungunya, dengue, or Zika virus cases

Response scenario	Other considerations	Actions
Risk for imported cases	**Low Risk**	❖ Prepare messaging for public outreach ❖ Strengthen working relationships between public health and vector control agencies
	Elevated Risk	❖ Provide education and outreach to healthcare providers ❖ Ensure rapid laboratory testing available for suspect human cases of chikungunya, dengue, or Zika testing ❖ Raise public awareness about *Aedes aegypti* mosquitoes
	Case Investigation and Response	❖ Investigate cases to determine travel history and where acquisition occurred ❖ Advise ill persons to prevent mosquito bites during viremic period (~1 week after illness onset) ❖ Perform *Aedes aegypti* trapping around the surrounding neighborhoods of cases ❖ Consider laboratory testing for chikungunya, dengue, or Zika among *Aedes aegypti* mosquitoes ❖ Inquire about illnesses among other household members (active case finding for locally-acquired cases) ❖ Visit surrounding neighborhoods of cases to look for potential *Aedes aegypti* breeding locations (i.e. water-holding containers) and perform source reduction ❖ Eliminate breeding sites, use larvicide insecticides, and then consider adulticide treatment around case neighborhoods if warranted

Key Recommendations

- Provide education about source reduction and mosquito avoidance
- Closely investigate travel-associated cases
- Facilitate laboratory testing for suspect and probable cases
- Track the number and distribution of cases
- Collaborate with vector control counterparts to compare human disease cases and mosquito surveillance results

Scenario 2: Response to Locally Acquired Cases

- Focal transmission
  - Discrete areas (neighborhoods) affected
  - Small numbers of locally acquired cases
- Widespread transmission
  - Multiple communities affected
  - High numbers of locally acquired cases

Response scenario	Other considerations	Actions
Response to locally-acquired cases	**Focal transmission**	❖ Inform public about risk of locally-acquired cases through press release(s) and social media ❖ Consider door-to-door campaign in affected neighborhood(s) for source reduction and to encourage mosquito avoidance ❖ Increase *Ae. aegypti* trapping and surveillance in affected areas by using oviposition traps or adult traps ❖ Consider laboratory testing for chikungunya, dengue, or Zika among *Aedes aegypti* mosquitoes in the area, if not already implemented ❖ Perform active case finding in affected communities ❖ Perform larvicide and/or adulticide spraying of affected neighborhoods ❖ Analyze human and mosquito surveillance data through mapping ❖ Describe epidemiology of persons affected and possible risk factors ❖ Ensure data is shared with public health, vector control, and healthcare partners

Scenario 2: Response to locally-acquired cases

Messaging

- ☐ Notify media and raise public awareness through press release(s) about locally acquired cases
- ☐ Increase public messaging about key topics:
  - Source reduction and mosquito avoidance
  - Disease symptoms and healthcare seeking recommendations
  - Local public health contacts
- ☐ Consider enhanced outreach in areas with known human cases
- ☐ Provide additional outreach to healthcare providers about diagnostic testing and treatment recommendations

Case Investigation and Surveillance

- ☐ Consider methods for enhanced disease surveillance
  - Active case finding in neighborhoods or communities where cases identified
  - Enhanced laboratory surveillance
  - Enhanced screening for febrile illnesses in healthcare settings
- ☐ Maintain up-to-date line list(s) of imported and locally-acquired cases
  - Consider use of Outbreak Module in MEDSIS
- ☐ Continue to track the number and spatial distribution of cases
- ☐ Describe key epidemiological and clinical features of cases
  - Assess clinical severity and impact on society
- ☐ Identify circulating virus types
- ☐ Continue collaboration with vector control
  - Collaborative outreach and education about source reduction
  - Map human cases and *Aedes aegypti* mosquito surveillance data to identify high-risk areas
  - Target high-risk areas for vector control operations

Other Activities

- ☐ Consider ICS activation to organize public health response
- ☐ Communicate with blood banks about risk of disease transmission through transfusion; consider screening donors for disease

Key Recommendations: Local Mosquito-borne Disease Transmission

- Notify media and raise public awareness
- Intensify communication with healthcare providers
- Enhance disease surveillance
  - Active case finding in communities where cases identified
  - Enhanced laboratory surveillance
- Track number and distribution of cases
- Collaborate with vector control to target high-risk areas for vector control operations

Scenario 3: Recovery

- Decreased number of cases
- Implementation of sustainable public health measures

Response scenario	Actions
Recovery	❖ Consider enhanced surveillance for human cases in high-risk areas ❖ Decrease *Aedes aegypti* surveillance to baseline levels

AVAILABLE RESOURCES

Mosquito-Borne Diseases

Arizona Arboviral Handbook for Chikungunya, Dengue, & Zika Viruses

Zika - Home

Zika is a flavivirus transmitted by mosquitoes that was first identified in Uganda in 1947. In 2015, Zika virus circulation in the Americas began in northeastern Brazil.

Zika virus transmission has not been identified within the continental United States; currently, all cases have occurred among travelers who visited areas where the virus is circulating. Check out affected areas and current CDC travel alerts. Because of the risk during pregnancy, pregnant women are recommended to consider postponing travel to areas where the virus is circulating.

Preventing mosquito bites, both at home and when traveling, is key to preventing disease spread. You can also make sure there is no standing water around your home where mosquitoes can breed, such as in buckets, toys, or plant holders.

- Signs and symptoms
- Information for Healthcare Providers
- Zika Prevention

Laboratory Zika Webpage

Specimen Collection

- The preferred specimens for Zika testing are a volume of **2 to 4 milliliters of serum**. Specimens may be collected in **clot activated or serum separator tubes such as red top, tiger top, or gold top vacutainer tubes**.
- ASPHL is requiring that a **minimum of 2 vials** of serum specimens be shipped for suspect cases.
- If you are submitting a specimen from a symptomatic patient, ASPHL is asking for a urine sample so that testing can be validated for urine. Results will not be reported for urine specimens at this time.

Submitting Specimens to ASPHL

Reminder: Specimens cannot be submitted to ASPHL until prior approval has been received. If you believe you have a suspect case of Zika Virus, you must contact your local health department.

- When submitting a specimen to ASPHL, ensure that the clinical submission form is completed
  - ASPHL is also requesting the following **required additional information** be included on the submission form: **date of onset of symptoms, clinical symptoms, travel history, and Flavivirus vaccination history**
- Specimens must be shipped at 4 C (cold packs), DO NOT FREEZE

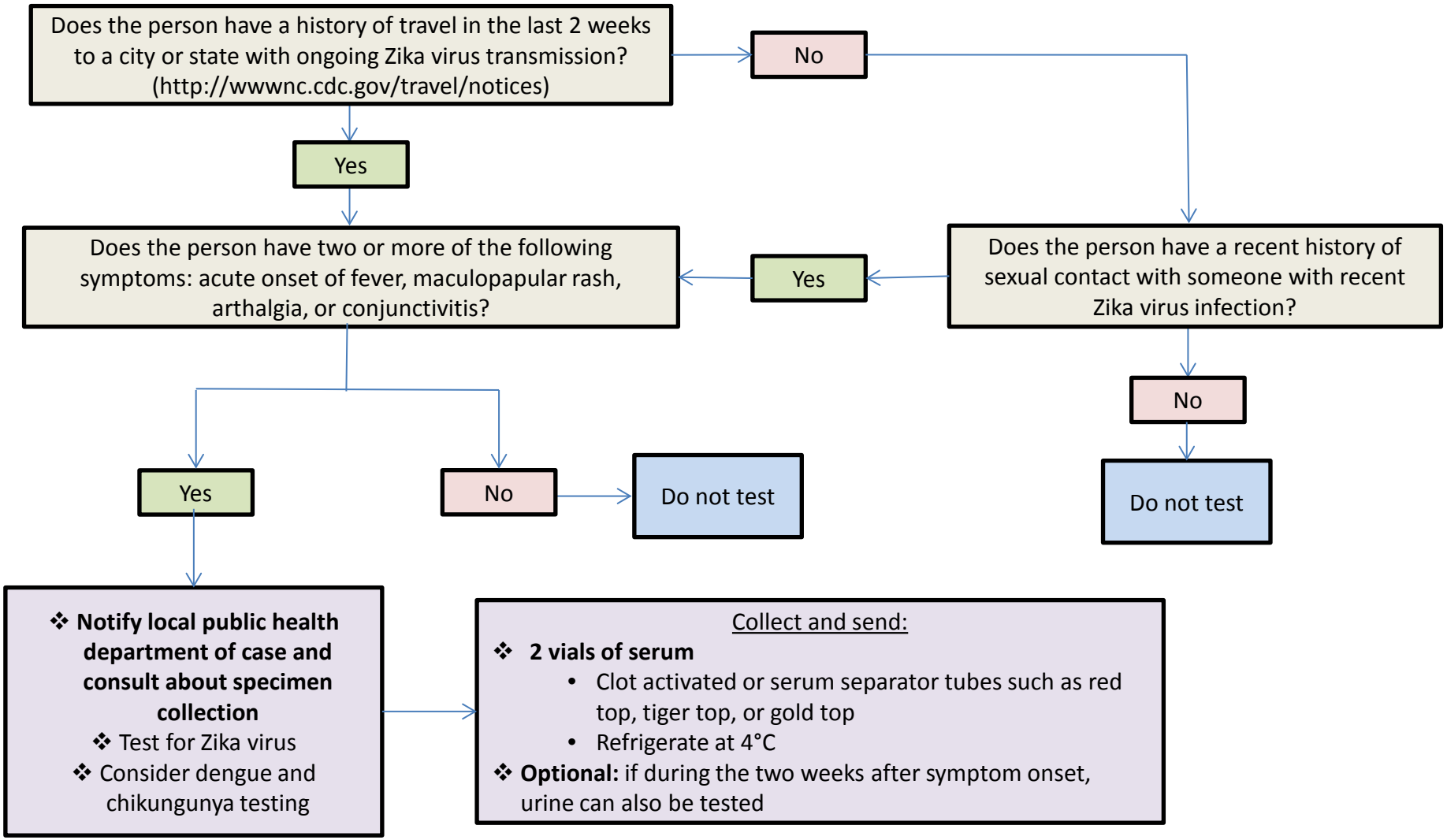
Packaging and Shipping

The CDC has provided the following guidance for shipping Zika virus.

Specimens collected from individuals for Zika virus studies may be transferred within the U.S. as Category B Biological substances in accordance with Department of Transportation (DOT) Hazardous Materials Regulations (49 CFR Part 171-180). Guidance for packaging samples in accordance with Category B Biological substance requirements can be found in the CDC/NIH Publication Biosafety in Microbiological and Biomedical Laboratories, 5th edition. Additional information about the Department of Transportation Hazardous Materials Transport Regulations may be found on the ADOT website.

Mosquito BREEDING SITES

Zika Testing Algorithms



Draft Materials Available by Request for Travel-Associated or Locally Acquired Cases

- Press releases
- Health Alert Network notifications
- Talking points

Community Investigation Materials (draft – available by request)

- Cluster investigation protocol
  - Phlebotomy & laboratory supplies
- Household investigation forms
- Individual questionnaire forms
- Adult and child consent forms
- Adult and immature mosquito assessment forms

ADHS Vectorborne & Zoonotic Disease Team

602-364-3676

vbzd@azdhs.gov

Arizona Department of Health Services

Health and Wellness for all Arizonans

EXTRA SLIDES

Arizona
Interim Zika Testing Algorithms for
Healthcare Providers
Testing guidance is subject to change

3/3/2016

Zika Testing & Counseling Considerations

- **No treatment is available for Zika virus**, and the decision to test should be made carefully after conversations between the patient and healthcare provider.

- **Zika testing can lead to inconclusive results due to IgM antibody cross-reactivity with infections from other flaviviruses including dengue and West Nile, as well as yellow fever and Japanese encephalitis virus vaccination.** A positive or inconclusive serologic test result might not indicate true Zika virus infection.

- **For pregnant women with positive results, the risk for microcephaly or other complications is unknown.**

- Although some countries (such as Mexico) have ongoing Zika virus transmission, the risk level for disease transmission is not the same in all areas. **Decisions to test based on travel history can be made on an individual basis at the discretion of the local health department and healthcare provider.**

Case Reporting & Specimen Submission

- **All suspected cases should be reported immediately to the local health department:**

http://www.azdhs.gov/preparedness/epidemiology-disease-control/index.php#resources-county

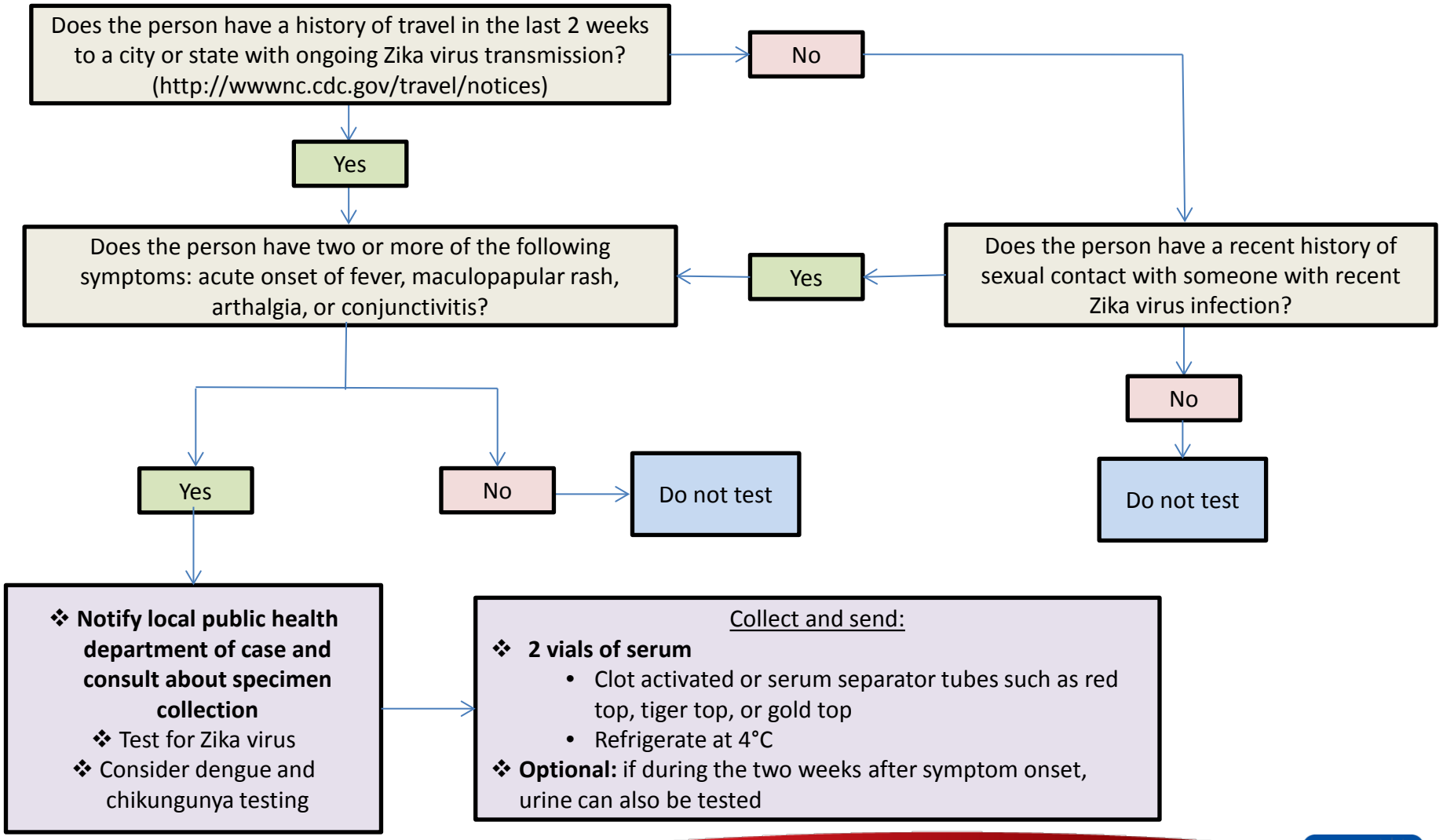
  - Local health departments can help coordinate testing if warranted

- If testing is approved, send the laboratory submission form with specimens to the Arizona State Public Health Laboratory: http://www.azdhs.gov/documents/preparedness/state-laboratory/public-health-microbiology/clinical-microbiology-submission-form.pdf
  - On the submission form, write "To be forwarded to CDC for Zika testing" under Other in the Virology section.

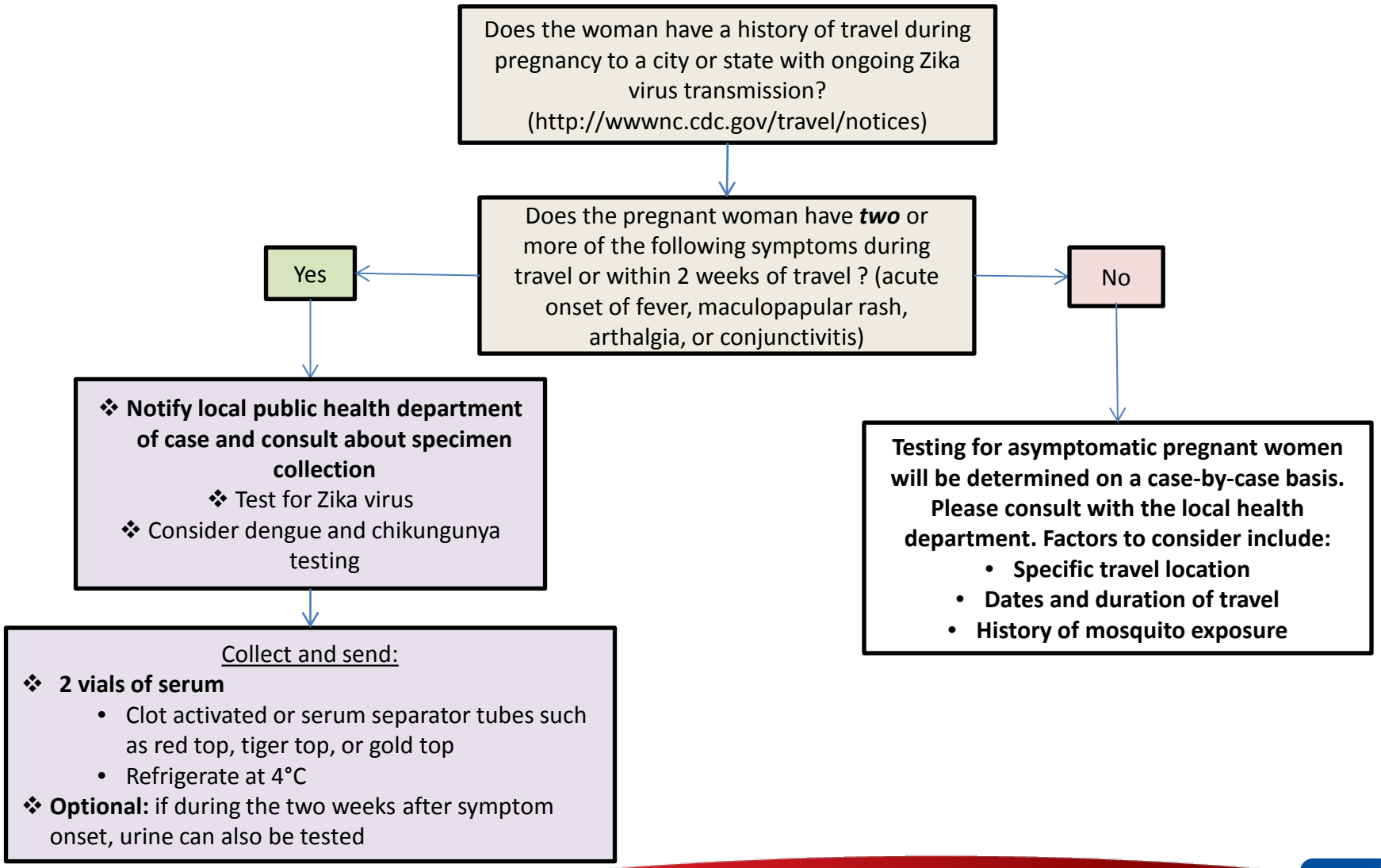
- **If testing for Zika, consider testing for dengue and chikungunya**
  - If desired, check the dengue and chikungunya boxes on the lab submission form.

- **Results for Zika virus testing might not be available until 3-4 weeks after the specimen is collected. Zika test interpretation guidance is available from the CDC:**
- Fact Sheet for Pregnant Women: Understanding Results from the Zika MAC-ELISA
- Fact Sheet for Patients: Understanding Results from the Zika MAC-ELISA
- Fact Sheet for Health Care Providers: Interpreting Zika MAC-ELISA Results

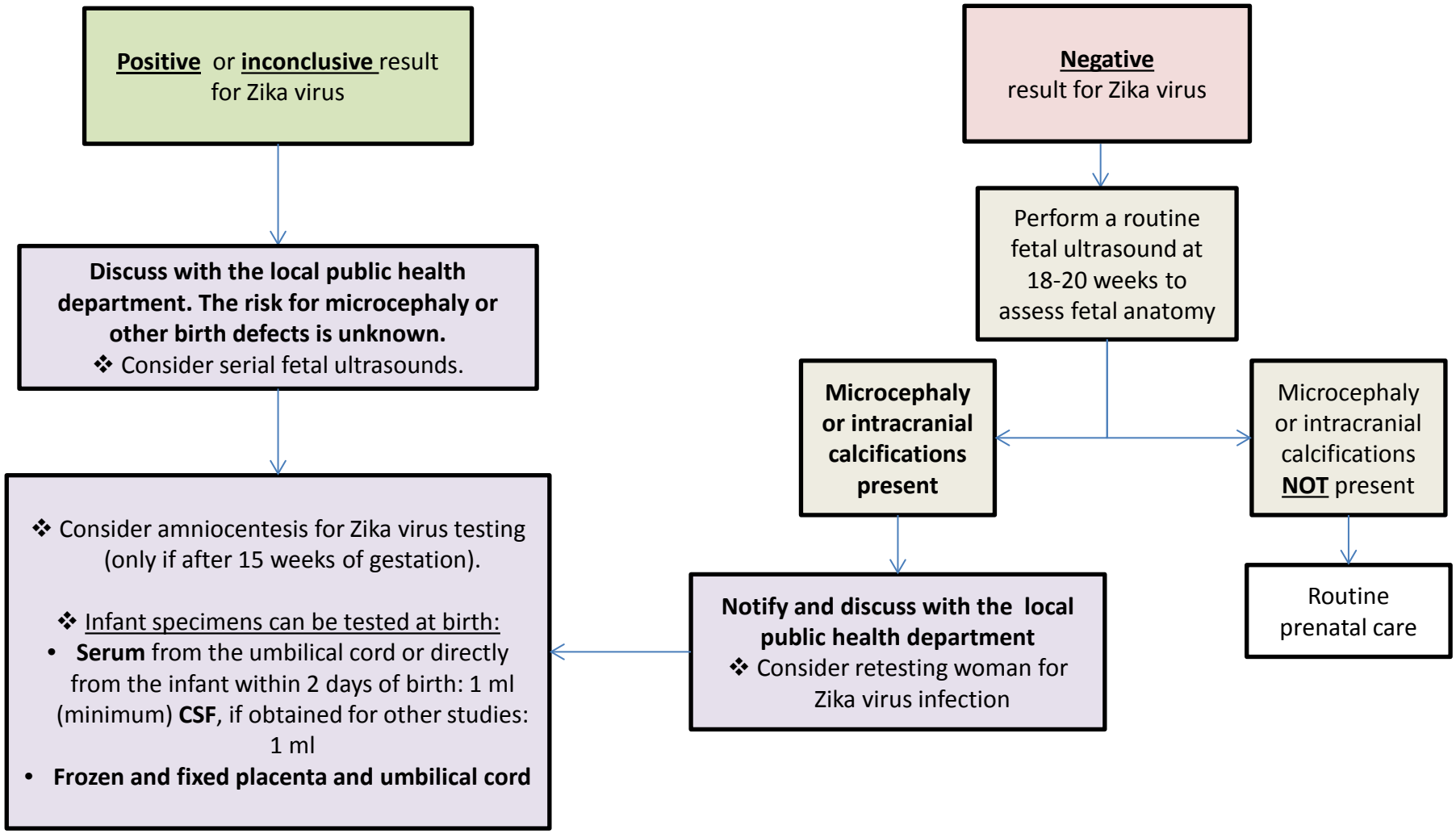
Zika Testing for Males and Non-pregnant Females



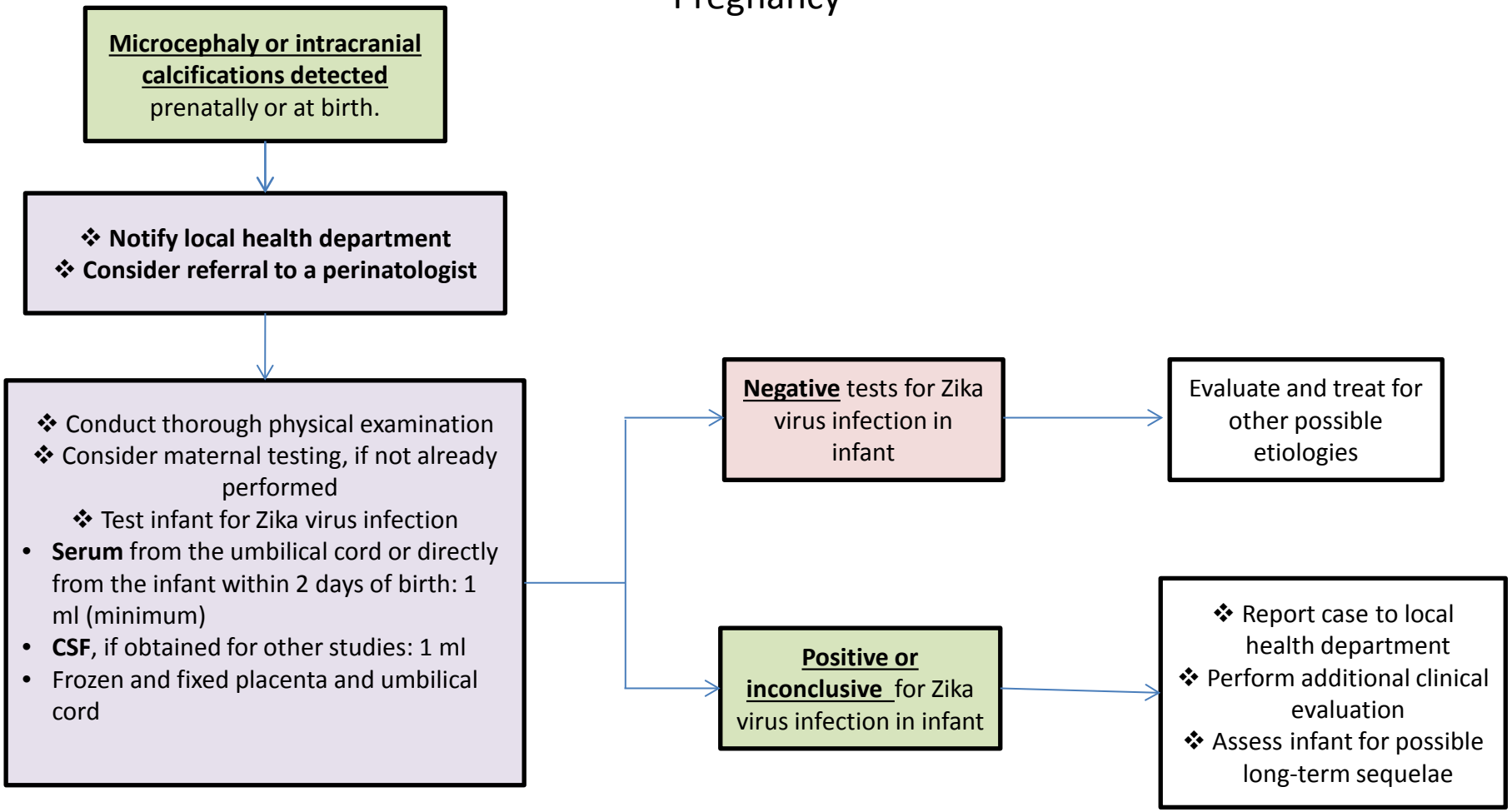
Zika Testing for Asymptomatic Pregnant Women



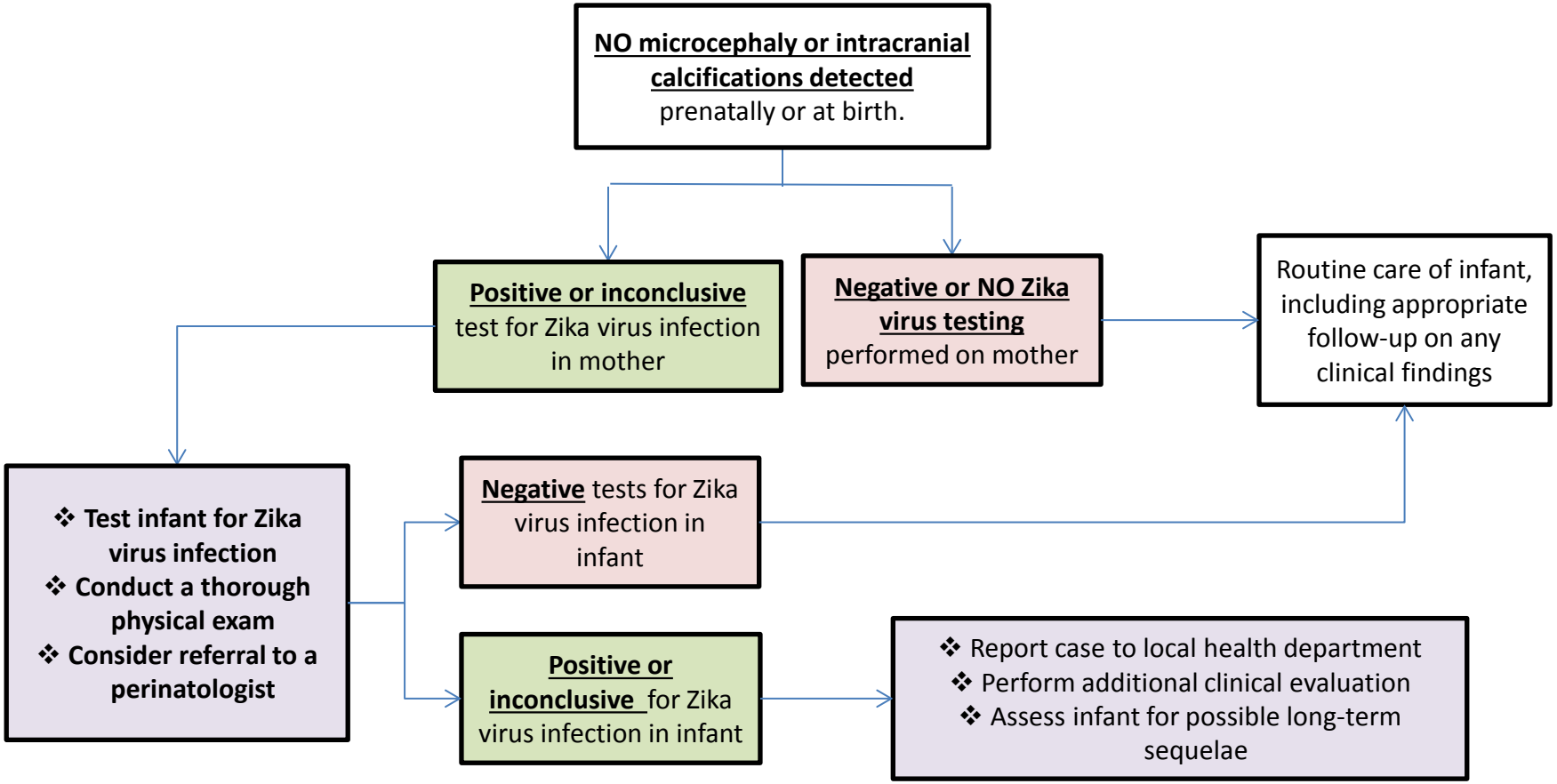
Next Steps for Pregnant Women after Zika Testing is Completed



Zika Testing for Infants **With Microcephaly or Intracranial Calcifications** whose Mothers Traveled to or Resided in an Area with Zika Virus Transmission During Pregnancy



Zika Testing for Infants **Without Microcephaly or Intracranial Calcifications** whose Mothers Traveled to or Resided in an Area with Zika Virus Transmission During Pregnancy



Council Members

10:15 – 10:45 am

DISCUSSION OF ZIKA PREPAREDNESS

Cara Christ, MD

10:45 – 10:55 am

SUMMARY/NEXT STEPS

Cara Christ, MD

10:55 am

CALL TO THE PUBLIC

Cara Christ, MD

11:00 am

CLOSING REMARKS & ADJOURN