RUSH UNIVERSITY MEDICAL CENTER

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Response to Zika Virus in Chicago

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All planners, editors, faculty and reviewers of this activity have no relevant financial relationships to disclose. This presentation was created without any commercial support.

Learning Objectives

At the conclusion of this course participants will be able to

- **Enable the learner to gain knowledge of emerging healthcare-associated infections pathogens.**
- **Identify effective infection control strategies to mitigate spread of multi-drug resistant organisms.**
- **Raise awareness of emerging disease threats and identify appropriate diagnostic testing, reporting and prevention methods.**
- **Raise awareness of local public health issues including opioid epidemic and immigrant health.**

To obtain credit you must:

- **Be present for the entire session**
- **Complete an evaluation form**
- **Return the evaluation form to staff**

Certificate will be sent to you by e-mail upon request.

In support of improving patient care, [Insert name of Joint Accredited Provider] is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

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Objectives

HEALTHY CHICAGO
CHICAGO DEPARTMENT OF PUBLIC HEALTH

- Provide overview of CDPH Zika virus response
- Overview requesting Zika testing through public health
- Discuss available provider resources

Chicago by the numbers

HEALTHY CHICAGO
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- 2.7 million residents (2015)
- 14.8 births/1,000 residents (2014)
  - ~40,000 births per year
- From October 2015 to September 2016
  - >680,000 travelers from countries/territories with active Zika transmission, filtered through ORD

Chicago Zika Response

HEALTHY CHICAGO
CHICAGO DEPARTMENT OF PUBLIC HEALTH

- Surveillance/testing
- Outreach
  - Providers and public
- Vector Control

Zika testing in Chicago

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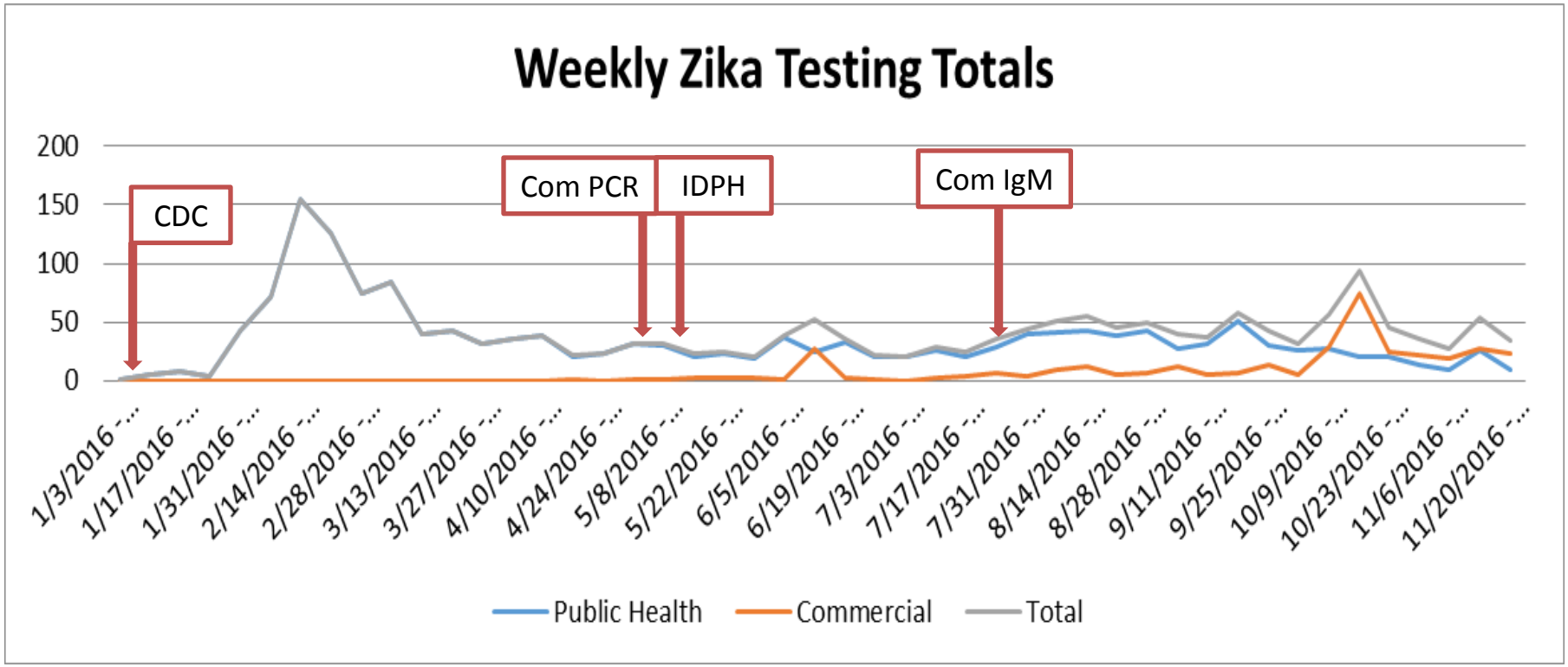

Prioritized testing via public health

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- Pregnant women regardless of symptoms with travel exposure up to 8 weeks prior to conception or sexual exposure with partner that traveled to Zika affected area
- Symptomatic non-pregnant persons
- Infants with Zika associated birth defects, whose mother was exposed during pregnancy
- Infants born to a mother with positive or inconclusive test results
- Infants born to a mother with exposure and not previously tested
- Persons with Guillain-Barre symptoms

Public Health Zika Testing- 2016

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- 1736 testing requests received
- Of 1444 authorized, 1201 were Chicago residents
  - 211 (18%) symptomatic
  - 1043 (87%) pregnant women
- 31 cases with evidence of Zika* (all travel associated)
  - 21 female, 6 of which were pregnant
  - Central America most common travel exposure (35%)

* Any evidence of Zika infection by molecular of serologic testing

High immigrant census tracts compared with residents receiving Zika testing, 2016

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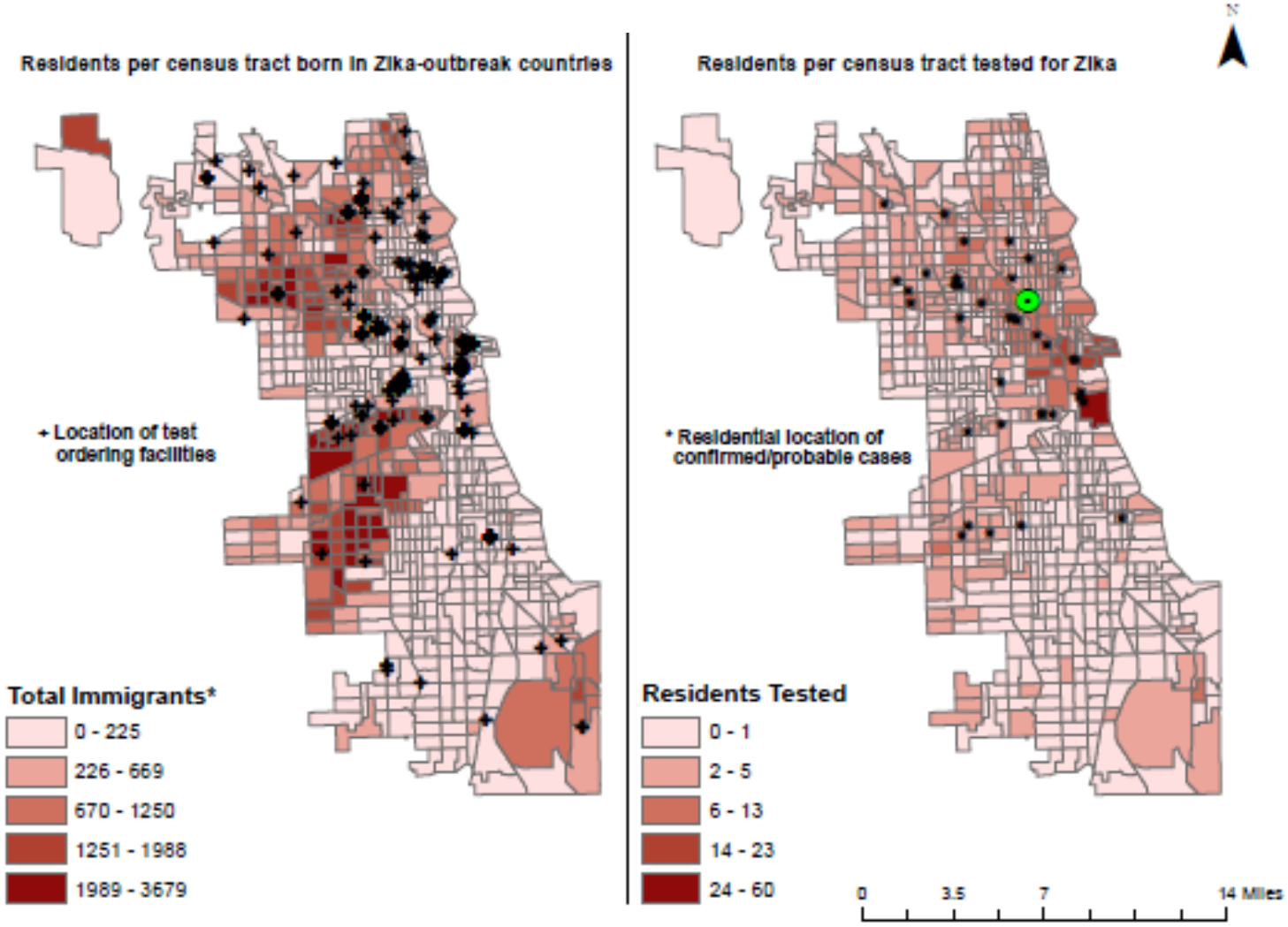

* Includes those born in the Caribbean, Central America, Argentina, Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Venezuela, Puerto Rico, and the U.S. Virgin Islands; Data Source: U.S. Census Bureau's American Community Survey, 2011-2015

Provider Outreach

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- Training webinars
- Perinatal network meetings
- VFC annual meetings
- Grand rounds
- Chicago Health Alert Network (HAN)
- Provider office campaign

Provider Outreach

HEALTHY CHICAGO
CHICAGO DEPARTMENT OF PUBLIC HEALTH

- Targeted provider office campaign
  - Obstetricians, family practitioners and pediatricians in neighborhoods thought to be at highest risk, but have low testing numbers (~250 clinics)
  - Enhance surveillance of pregnant women with exposure to Zika
  - Take away brochure with prevention messaging

Provider Office Materials

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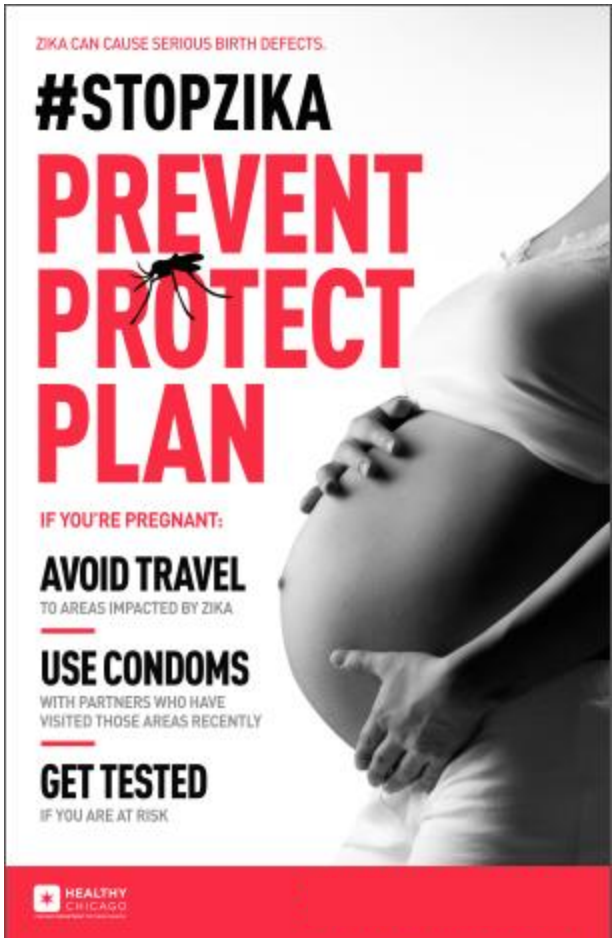

PREVENT ZIKA DURING PREGNANCY

- **AVOID TRAVEL** to Zika affected areas.
- Zika can be transmitted sexually. **Use condoms** for 8 weeks after travel for women and 6 months for men to prevent infection.
- Use condoms **throughout your pregnancy** if your sex partner has traveled to a Zika affected area.

PROTECT AGAINST MOSQUITO BITES

- Use mosquito **repellent**
- Use **long pants** & sleeves
- Remove **standing water**
- **Screen** doors and windows

PLAN AROUND ZIKA

- If you are pregnant and you or your sex partner have traveled to a Zika affected area, **GET TESTED.**
- Talk to your doctor about **birth control** if you are not planning on getting pregnant.
- Not all babies show physical defects caused by Zika. If you or your partner have been exposed to Zika, ask about **getting your baby tested.**

#STOPZIKA

WWW.CHICAGOHAN.ORG/ZIKA

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Public Outreach

HEALTHY CHICAGO
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- 2016 and 2017 summer media campaigns
    - Billboards, CTA buses and trains, taxi tops, airports
    - Raise general awareness of Zika among Chicago residents
- StopZikaChicago website- launch this July
- Zika Prevention Kits
    - Emphasize prevention of sexual transmission throughout pregnancy
    - Distributed through WIC clinics, prenatal care providers

Public Outreach

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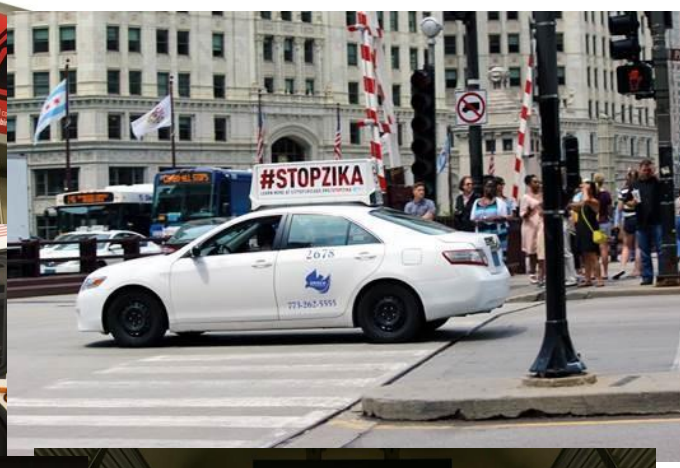

A. aegypti and *A. albopictus* geographic ranges

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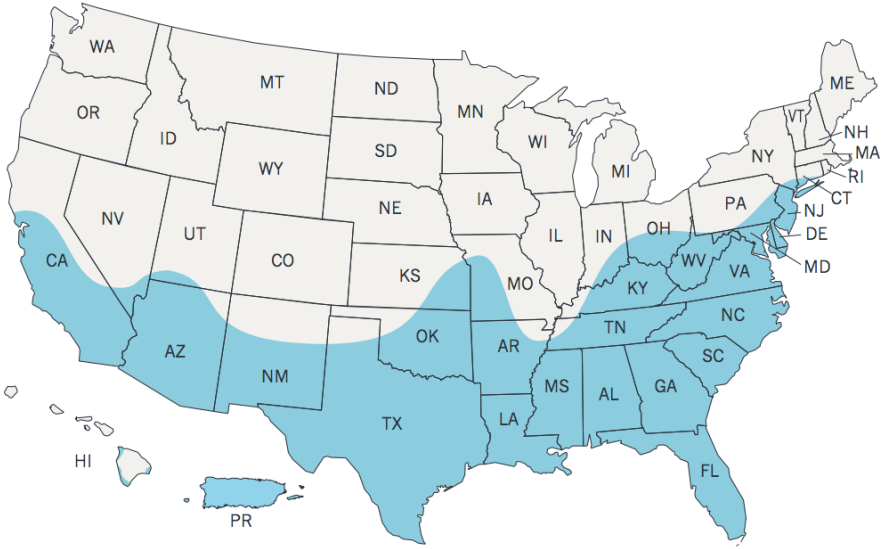

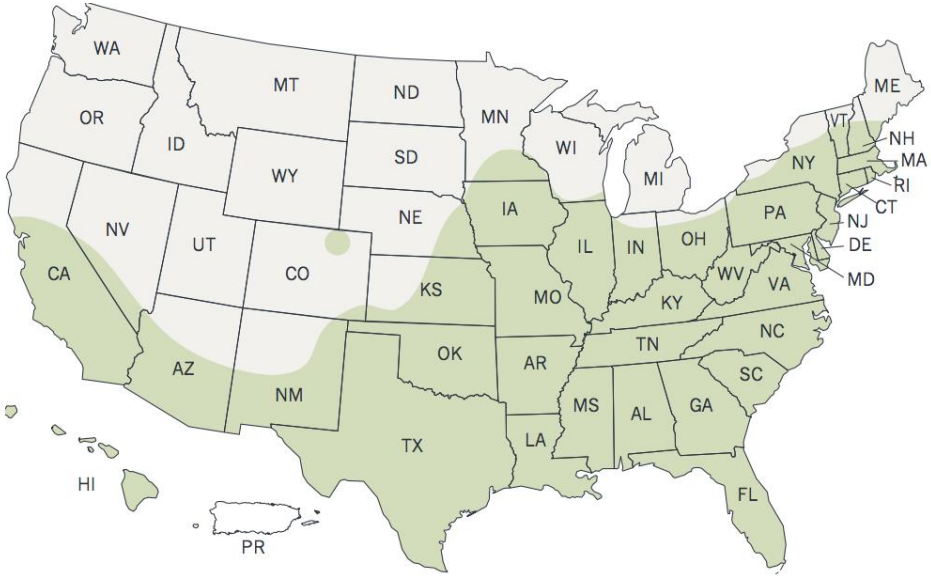

Aedes aegypti

Aedes albopictus

http://www.cdc.gov/zika/pdfs/vectorcontrolaedesmosquitoes.pdf

Vector Control

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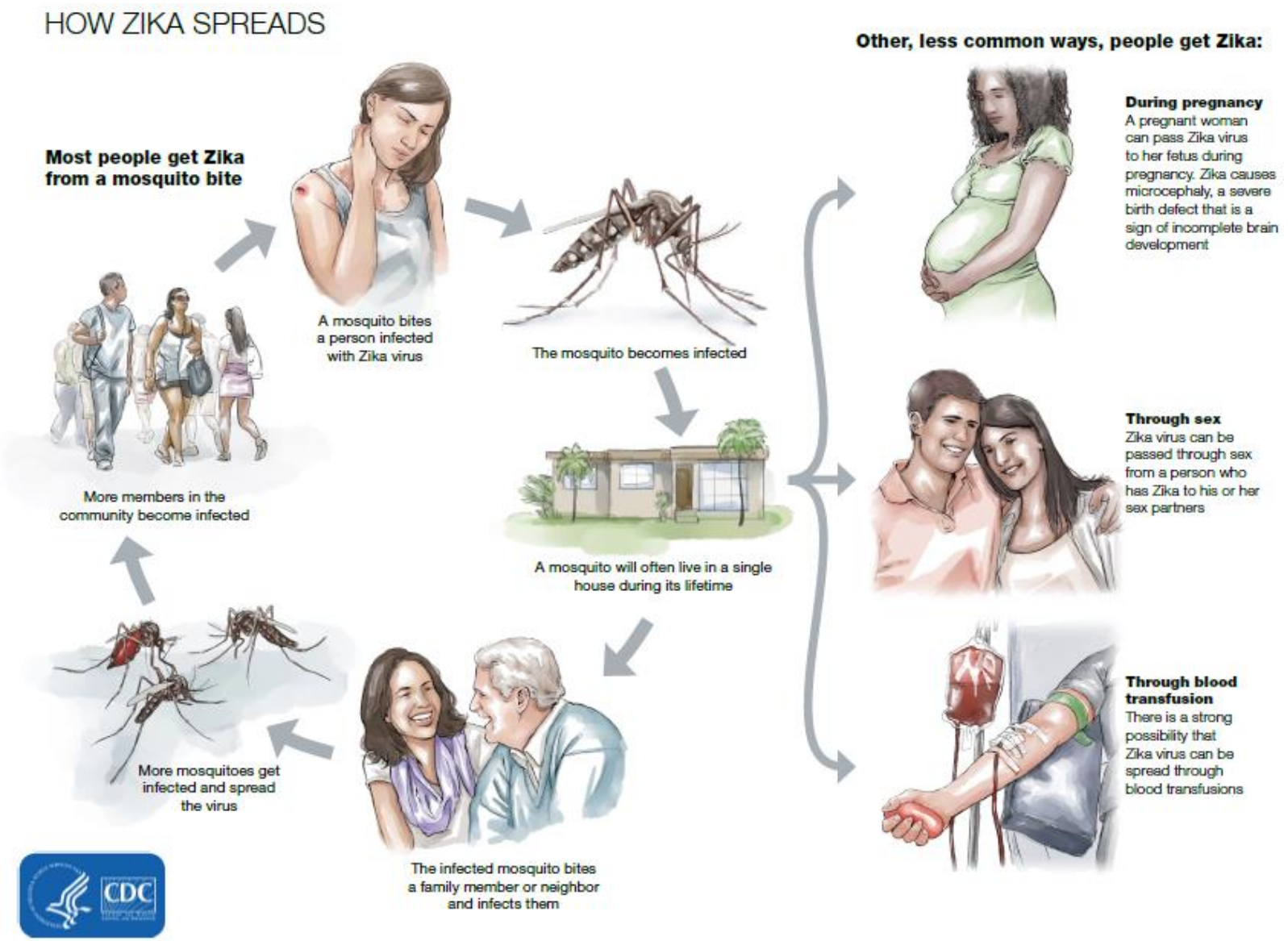
- First time doing *Aedes* surveillance in 2016
- BG-Sentinel traps deployed in nine locations
- 4492 *Ades albopictus* collected around tire recycling facility (81% female)
  - Multiple rounds of larviciding, adulticiding, and tire removal
- *Aedes* surveillance continuing in 2017

Modes of transmission



http://www.cdc.gov/zika/transmission/index.html

Vector Control and Communicable Disease coordination

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- CD notifies VC upon identification of PCR positive case
  - Case is contacted about trap placement
  - Traps placed for 14 days
  - 3 block boundary around address inspected for breeding sites
    - Sample catch basins and larvicide if indicated

Where can I test my patient?

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- IDPH has PCR and serologic (IgM) testing available, and if needed, will send samples to CDC for PRNT testing.
- Chicago Department of Public Health must approve all public health lab testing; no cost to patient or provider.
- Commercially, PCR and serologic (IgM) testing
- Time since exposure or symptom onset should be taken into account when ordering Zika testing
- CALL CDPH if you have questions about which test to order.

Requesting Zika testing through public health

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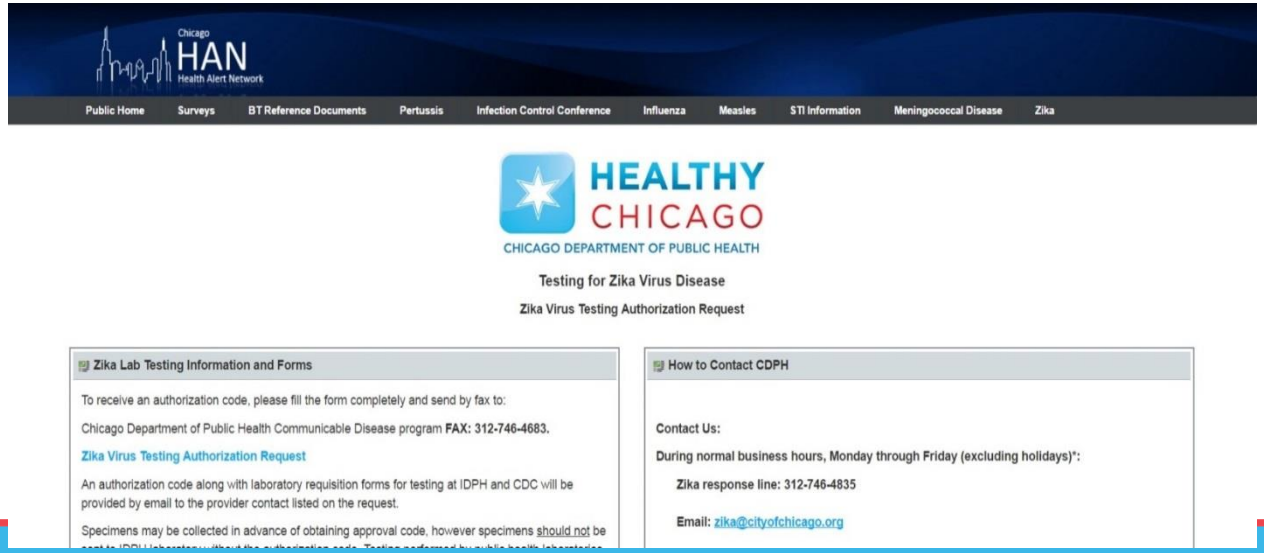
Complete CDPH Test Authorization form and *fax* to CDPH Communicable Disease Program at

312-746-4683

- **https://www.chicagohan.org/zforms**
- **ZIKA CALL LINE: 312-746-4835**



US Zika Pregnancy Registry

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- All pregnant women with laboratory evidence of Zika virus infection and infants exposed to Zika prenatally and perinatally are included in the registry
  - Monitor pregnancy and infant outcomes following Zika virus exposure
- Data is collected at several points during and after pregnancy
  - Maternal History Form- collected during prenatal period
  - Neonate Assessment Form- collected at delivery
  - Infant follow-up Form- collected at 2, 6, 12 month pediatric appointments

CDPH Provider Resources

HEALTHY CHICAGO
CHICAGO DEPARTMENT OF PUBLIC HEALTH

- Chicago Health Alert Network (HAN)
  - Communication portal for CDPH partners
  - Distribute critical alerts to subscribers

https://www.chicagohan.org/zika

CDPH Health Alert Network

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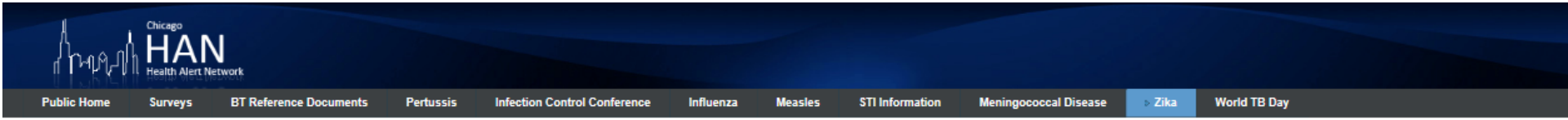

Zika Resources

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Resources for Providers

CDPH Zika Virus Testing Authorization Request
- How to request Zika testing through public health laboratories (Illinois Dept. of Public Health and CDC)

Zika screening tool for pregnant patients
- Asking your patients about potential exposure to Zika

Illinois Dept. of Public Health (IDPH) Zika testing algorithm
- Roadmap for choosing the appropriate Zika test for your patient

CDPH Zika Delivery Checklist
- Infant evaluation, testing and tissue specimen collection at the time of birth in the event of maternal Zika exposure

CDPH Provider Zika FAQ
- Information on specimen collection, storage and interpretation of results from public health testing

Outcomes of pregnancies with laboratory evidence of possible Zika infection
- Routine reporting from the US Zika Pregnancy Registry

Resources for Discussing Zika with Patients

Preconception counseling for patients before and after travel to active Zika transmission areas
Guidance on preventing sexual transmission of Zika
Zika basics and prevention guidance

Contacting CDPH

Contact Us:

During normal business hours, Monday through Friday (excluding holidays)*:

Zika response line: 312-746-4835

Email: zika@cityofchicago.org

Fax: 312-746-4683

**After hours, weekends, and holidays, call 311 and ask for the communicable disease physician on-call (or 312-744-5000 if outside the City of Chicago).*

Pregnancy & Zika Testing

CDC

CDC's top priority for the public health response to Zika is to protect pregnant women because of the risks associated with Zika virus infection during pregnancy.

Recently, CDC updated its interim guidance for healthcare providers caring for pregnant women with possible Zika virus exposure. This web tool is intended to help healthcare providers apply the updated recommendations for Zika virus testing, interpretation of results, and clinical management for a pregnant woman with possible exposure to Zika virus.

- This tool is intended for healthcare providers and public health officials in the United States

Zika delivery checklist

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DELIVERY CHECKLIST FOR ZIKA/SUSPECTED ZIKA CASES
Chicago Dept of Public Health/Cook County Dept Public Health

This document reviews the laboratory and surveillance (US CDC Zika Pregnancy Registry) requirements for identified and suspected Zika cases who present for delivery. The following four steps are covered.

Step 1: Assess patient for clinical status
↓
Step 2: Coordinate post-partum testing
↓
Step 3: Complete Infant assessment and US Zika Registry Form
↓
Step 4: Contact Health department

STEP 1: Determine clinical status to guide requirements for testing at delivery; determined by obstetric service

a. **CONFIRMED MATERNAL ZIKA: Prenatal maternal serum** or **urine** RT-PCR positive for Zika
OR
b. **PROBABLE MATERNAL ZIKA: Prenatal maternal serology** reflects either (a) IgM positive where the Plaque Reduction Neutralization Test (PRNT) is pending, **OR** (b) PRNT result indicates Zika virus infection **OR** undifferentiated flavivirus infection
OR
c. **SUSPECTED MATERNAL ZIKA**: Prenatal maternal testing not done but **mother was exposed to Zika** virus through travel or unprotected sex **OR** prenatal maternal test results unavailable or negative, but **mother exposed to Zika** virus through travel or unprotected sex **AND** there are **pre- or postnatal findings of microcephaly, intracranial calcifications, and other brain/eye abnormalities in live birth OR fetal demise**

***NOTE: Requirements for testing as follows, but described in more detail in Step 3:
1. **ALL INFANTS SHOULD BE TESTED WITHIN 2 days of life,** regardless of above scenario
2. **SOME PLACENTAS SHOULD BE TESTED,** depending on scenario above and per CDC preference, hence we recommend **ALWAYS SAVE PLACENTA, MEMBRANES AND CORD**
3. **Maternal testing ONLY performed in scenario c above**

Generally, the obstetric service will not be ordering these tests (with exception of scenario c, where maternal testing indicated). The obstetric service will need to communicate with the appropriate providers to request pediatric and pathology testing.

STEP 2: Coordinate Post- Partum Testing: CONTACT PEDS, PATH & LAB*

We recommend all testing at delivery be sent to the Illinois Dept of Public Health (IDPH). Commercial testing is available for PCR (serum and urine) and serology (IgM); however, for surveillance purposes, we STRONGLY encourage all specimens be sent to IDPH lab.

Bottom line: Communicate with pediatrics, pathology and hospital laboratory in advance to coordinate specimen collection and submission to IDPH lab. ***Specimens may be collected prior to obtaining approval and authorization codes. But, specimens should NOT be sent to public health laboratory without prior authorization*** (See step 4 for how to obtain approval/authorization).

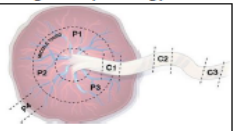
**At most hospitals, the micro lab or the "referred testing lab" manage public health send-out specimens*

a. Infant Specimen Guidelines: required for all infants from scenario a-c; pediatric service can order

Serum (should be always ordered)	Collect in serum separator tube to obtain total volume of 1.0 ml of serum (i.e., amount of whole blood required is approximately 2.5-3 ml). Centrifuge and transfer serum to a separate tube
Urine	Collect at least 1 cc of urine in a sterile leak-proof container and wrap in parafilm. A patient-matched serum specimen must accompany a urine specimen submission.
Whole blood	Minimum volume required is 1.0 ml. Collect samples in EDTA (purple top) tube. A patient-matched serum specimen must accompany a whole blood submission.
CSF	Only if obtained for other studies, aliquot a sample (minimum 1.0 ml) for Zika testing. Collect in sterile container (15 or 50 ml conical tube). Close tightly and seal with parafilm.

b. Placenta/Tissue Guidelines: While not necessary for each scenario, please send to pathology (CDC will make ultimate decision on testing) and health department will arrange with pathology service

Placenta and membranes	• At least 4 full-thickness pieces (0.5-1 cm x3-4 cm thick) from middle third of placenta and one from placental margin, including maternal and fetal sides of placenta, along with membranes (5 x 12 cm strip), and any pathologic lesion, if present • May be refrigerated at +4°C for <24 hours until fixed in formalin • Place the sections in a two twist screw top sterile cup containing formalin. Tightly screw the lid to prevent leakage • Paraffin blocks may be submitted as well • Remainder of placenta can undergo routine, in hospital, pathologic evaluation
Umbilical cord	≥ 3 segments (2.5 cm each) from proximal, middle, and distal to insertion site
Additional tissues (fetal demise)	*Note: It is critical to maintain the tissue architecture to evaluate viral pathology. Certain fetal tissues require longer fixation, please fix brain specimens for 48-72 hours.* • Brain/spinal cord: 0.5–1 cm^3 each (≥ 5 specimens from different parts of each) • Solid organ (heart, lung, liver, kidneys, skeletal muscle, eyes, bone marrow): 0.5-1.0 cm^3 each (1 representative specimen from each solid organ); eye highly recommended • Fixed in formalin or paraffin • Remainder of tissue can undergo routine, in-hospital, pathologic evaluation



***NOTE: For authorization of tissue specimens only, the health department will need the following:
- Maternal ultrasound results (if applicable, please include dates and findings)
- Birth Measurements and Percentiles (e.g., Head Circumference, Birth Weight, Birth Length)
- Newborn exam findings and any additional testing/imaging (including TORCH or genetic testing)

c. Maternal Specimen Collection Guidelines: Only for scenario c above where no maternal testing upon admission; obstetric service should order

Serum (should be always ordered)	Collect samples in serum separator tube to obtain total volume of 1.0 ml of serum (i.e., amount of whole blood required is approximately 2.5-3 ml). Centrifuge and transfer serum to a separate tube
Whole blood	Minimum volume required is 1.0 ml. Collect samples in EDTA (purple top) tube. . A patient-matched serum specimen must accompany a whole blood specimen submission.
Urine	Collect 3 cc of urine in a sterile leak-proof container and wrap in parafilm. A patient-matched serum specimen must accompany a urine specimen submission.

Outpatient pediatric checklist for infants born to mothers with lab evidence of Zika

HEALTHY CHICAGO
CHICAGO DEPARTMENT OF PUBLIC HEALTH

CDC's Response to **Zika**

Outpatient Management Checklist[**]

	2 weeks	1 month	2 months	3 months	4-6 months	9 months	12 months
ROW 1 **Infant with abnormalities consistent with congenital Zika syndrome[†] and laboratory evidence of Zika virus infection[*]**	☐ Thyroid screen (TSH & T4)	☐ Neuro exam	☐ Neuro exam	☐ Thyroid screen (TSH & T4) ☐ Ophthalmology exam	☐ Repeat audiology evaluation (ABR)		
	☐ Routine preventive health care including monitoring of feeding and growth ☐ Routine and congenital infection-specific anticipatory guidance ☐ Referral to specialists, including evaluation of other causes of congenital anomalies as needed ☐ Referral to early intervention services (See Page 3, Checklist 2)						
ROW 2 **Infant with abnormalities consistent with congenital Zika syndrome[†] and negative for Zika virus infection**	☐ Continue to evaluate for other causes of congenital anomalies ☐ Further management as clinically indicated						
ROW 3 **Infant with no abnormalities consistent with congenital Zika syndrome[†] and laboratory evidence of Zika virus infection[*]**	☐ Ophthalmology exam ☐ ABR				☐ Consider repeat ABR	☐ Behavioral audiology evaluation if ABR not done at 4-6 months	
	☐ Monitoring of growth parameters (HC, weight, and height), developmental monitoring by caregivers and health care providers, and age-appropriate developmental screening at well-child visits (See Page 3, Checklist 3)						
ROW 4 **Infant with no abnormalities consistent with congenital Zika syndrome[†] and negative for Zika virus infection**	☐ Monitoring of growth parameters (HC, weight, and height), developmental monitoring by caregivers and health care providers, and age-appropriate developmental screening at well-child visits						

Counseling travelers of reproductive age

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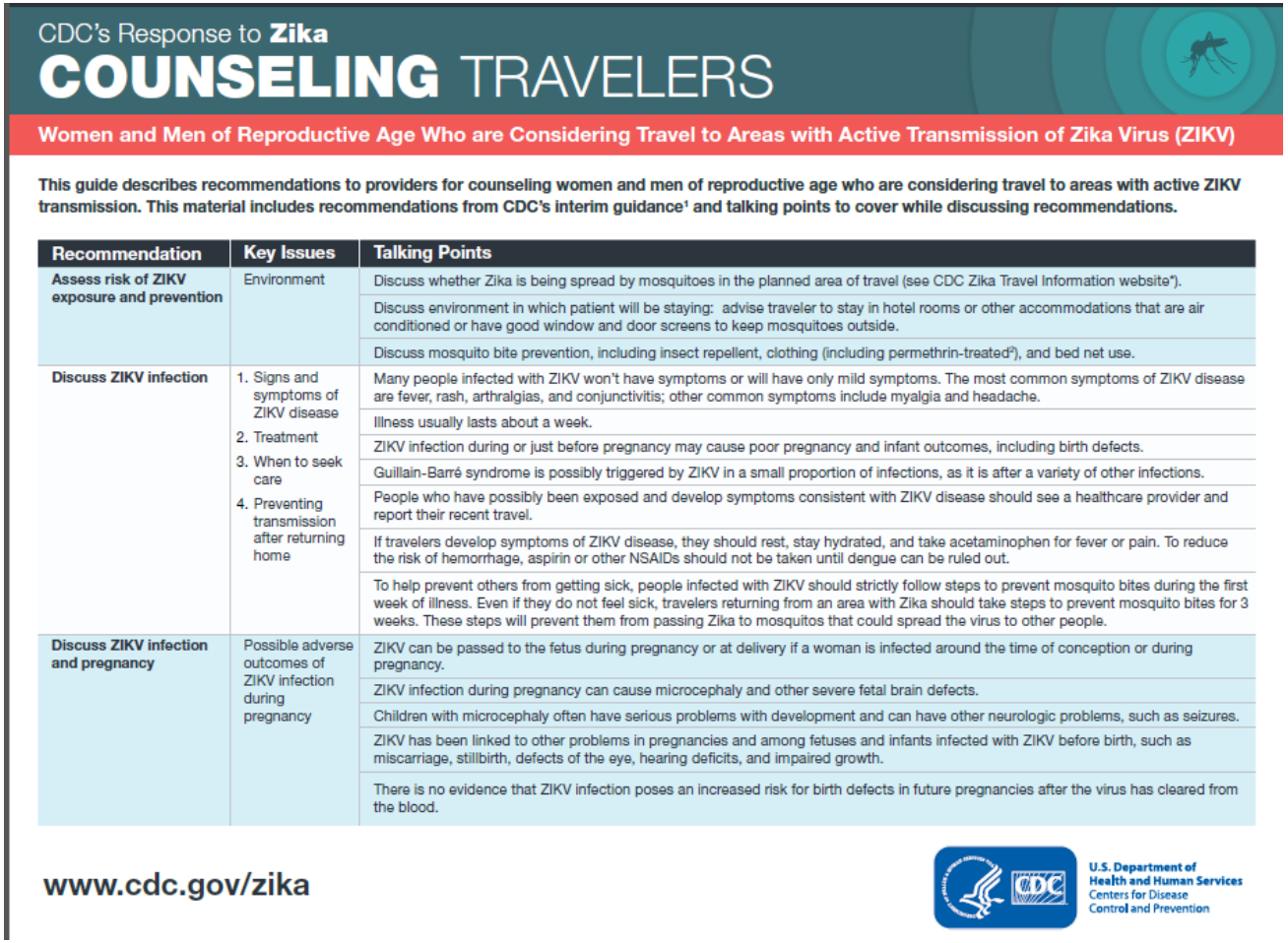

CDC's Response to **Zika**

COUNSELING TRAVELERS

Women and Men of Reproductive Age Who are Considering Travel to Areas with Active Transmission of Zika Virus (ZIKV)

This guide describes recommendations to providers for counseling women and men of reproductive age who are considering travel to areas with active ZIKV transmission. This material includes recommendations from CDC's interim guidance[1] and talking points to cover while discussing recommendations.

Recommendation	Key Issues	Talking Points
Assess risk of ZIKV exposure and prevention	Environment	Discuss whether Zika is being spread by mosquitoes in the planned area of travel (see CDC Zika Travel Information website*).
		Discuss environment in which patient will be staying: advise traveler to stay in hotel rooms or other accommodations that are air conditioned or have good window and door screens to keep mosquitoes outside.
		Discuss mosquito bite prevention, including insect repellent, clothing (including permethrin-treated[2]), and bed net use.
Discuss ZIKV infection	1. Signs and symptoms of ZIKV disease 2. Treatment 3. When to seek care 4. Preventing transmission after returning home	Many people infected with ZIKV won't have symptoms or will have only mild symptoms. The most common symptoms of ZIKV disease are fever, rash, arthralgias, and conjunctivitis; other common symptoms include myalgia and headache.
		Illness usually lasts about a week.
		ZIKV infection during or just before pregnancy may cause poor pregnancy and infant outcomes, including birth defects.
		Guillain-Barré syndrome is possibly triggered by ZIKV in a small proportion of infections, as it is after a variety of other infections.
		People who have possibly been exposed and develop symptoms consistent with ZIKV disease should see a healthcare provider and report their recent travel.
		If travelers develop symptoms of ZIKV disease, they should rest, stay hydrated, and take acetaminophen for fever or pain. To reduce the risk of hemorrhage, aspirin or other NSAIDs should not be taken until dengue can be ruled out.
		To help prevent others from getting sick, people infected with ZIKV should strictly follow steps to prevent mosquito bites during the first week of illness. Even if they do not feel sick, travelers returning from an area with Zika should take steps to prevent mosquito bites for 3 weeks. These steps will prevent them from passing Zika to mosquitos that could spread the virus to other people.
Discuss ZIKV infection and pregnancy	Possible adverse outcomes of ZIKV infection during pregnancy	ZIKV can be passed to the fetus during pregnancy or at delivery if a woman is infected around the time of conception or during pregnancy.
		ZIKV infection during pregnancy can cause microcephaly and other severe fetal brain defects.
		Children with microcephaly often have serious problems with development and can have other neurologic problems, such as seizures.
		ZIKV has been linked to other problems in pregnancies and among fetuses and infants infected with ZIKV before birth, such as miscarriage, stillbirth, defects of the eye, hearing deficits, and impaired growth.
		There is no evidence that ZIKV infection poses an increased risk for birth defects in future pregnancies after the virus has cleared from the blood.

www.cdc.gov/zika

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Summary messages

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- Share with OB-Gyns, internists, and family practice providers
- Communicate prevention messages to patients on travel, sexual exposure and conception planning
- Screen pregnant women for exposure to Zika at *every* encounter and test if exposed
- Work with CDPH to support the US Zika Pregnancy Registry
- Visit the Chicago Health Alert Network for resources and CDPH contact information

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- John Popovich
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- Matt Charles
- Jane Fornoff

Cook Co.- Mabel Frias

CDC Zika Clinical Response Team

Chicago providers!!

Karrie-Ann Toews

Career Epidemiology Field Officer, Zika Response Chief

hdn3@cdc.gov

312-746-6152

CDPH Zika hotline

312-746-4835

zika@cityofchicago.org

311: communicable disease physician on call

HEALTHY CHICAGO
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Zika Virus Testing Authorization Request

Completed form should be sent by fax to: Chicago Department of Public Health Communicable Disease program: ***fax 312-746-4683.***

Submitting lab should include both CDC-DASH form and IDPH test requisition with approval number once provided by CDPH.
CDC links: http://www.cdc.gov/zika/hc-providers/diagnostic.html

Form Completed by Name: _____ **Phone:** _____ **Email:** _____

Patient FName: _____ **LName:** _____ **Phone:** _____

Address: _____ **DOB:** _____ **Age:** _____ **Sex:** ☐ M ☐ F

City: _____ **State:** _____ **Zip:** _____

Provider FName: _____ **LName:** _____ **Facility:** _____

Phone: _____ **Email:** _____

Was the patient symptomatic within 2 weeks of exposure: ☐ Y ☐ N

Date of symptom onset: _____; **Symptoms (*mark all that apply*):**

☐ Rash If Yes, ☐ Maculopapular ☐ Petechial ☐ Purpuric ☐ Other: _____

☐ Fever; Recorded Temp:_____ ☐ Joint pain ☐ Conjunctivitis ☐ Myalgia ☐ Other: _____

Specimen collected: ☐ Y ☐ N **Specimen Collection Date:** _____ **Specimen Source(s):** _____

Did the patient travel to an area with known Zika virus transmission: ☐ Y ☐ N

Country visited: _____ City: _____ State: ____ Departure Date: _____ Return Date: _____

Country visited: _____ City: _____ State: ____ Departure Date: _____ Return Date: _____

Reason for Travel: ☐ Business ☐ Vacation ☐ Visit Family ☐ Mission ☐ Moved ☐ Other: _____

History of living in a dengue-endemic area? : ☐ Y ☐ N If Yes, countries: _____ Approximate Dates: _____

Prior Diagnosis of Chikungunya: ☐ Y ☐ N Approximate Date: _____

Prior Diagnosis of Dengue Fever: ☐ Y ☐ N Approximate Date: _____

History of receiving yellow fever or Japanese encephalitis vaccine? : ☐ Y ☐ N Approximate Date: _____

If no travel, did the patient have unprotected sexual intercourse with an individual who recently traveled to an area with known Zika virus transmission: ☐ Y ☐ N

Country visited: _____ City: _____ State: ____ Departure Date: _____ Return Date: _____

Did the sexual partner have symptoms consistent with Zika virus: ☐ Y ☐ N Symptoms: _____

Was the sexual partner tested for Zika virus: ☐ Y ☐ N

Is the patient pregnant? ☐ Yes ☐ No

If Yes,

a. Approximate gestational age at time of potential exposure: _____(week)

b. If applicable, approximate gestational age at time of symptom onset: _____(week)

c. Approximate date of conception: _____ and gestational age at present: _____(week)

d. Date of last ultrasound: _____ If, not performed, date scheduled: _____

e. Ultrasound findings: ☐ Normal ☐ Brain Calcification ☐ Microcephaly ☐ IUGR ☐ Other: _____

Additional tests ordered (and results if available) for other etiologies: _____

_____

Additional Comments:

_____

_____

CDPH, *September 14, 2016*

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
IDPH
PROTECTING HEALTH, IMPROVING LIVES

Print Form

Arboviral Lab Submission Form

Submitter Information

Authorization Number: 17- _____ **Submitter Phone Number:** _____ **Submitter Fax Number:** _____

Submitting Hospital/Clinic/Laboratory Name: _____

Submitter Mailing Address: (Please include apartment / suite number)

_____

City _____ **State** _____ **Zip Code** _____

Physician Name: _____

Patient Information

Patient Name: (First, Middle, Last) _____ **Date of Birth:** _____

Patient Address: (Please include apartment / suite number)

_____

City _____ **State** _____ **Zip Code** _____ **Medicaid Recipient ID:** _____

Sex: ◯ Male ◯ Female **Ethnicity:** ◯ Hispanic ◯ Non-Hispanic

Race: ◯ White ◯ African American/Black ◯ Native American ◯ Asian/Pacific Islander ◯ Other/Unknown

Test Request Information

Specimen Collection Date: _____ **Symptom Onset Date:** _____

Specimen Source: ◯ Serum ◯ Spinal Fluid ◯ Urine ◯ Amniotic Fluid ◯ Tissue ◯ Other **(Specify)** _____

Test Requested: ◯ Zika ◯ Chikungunya ◯ Dengue ◯ West Nile Virus ◯ St. Louis Encephalitis ◯ California Encephalitis

◯ Other **(Specify)** _____

Disease Stage: ◯ Acute ◯ Convalescent **Hospitalized:** ◯ Yes ◯ No **Pregnant:** ◯ Yes ◯ No

Clinical Symptoms: (mark all that apply):

◯ Fever ◯ Headache ◯ Stiff Neck ◯ Change in Consciousness ◯ Lethargy ◯ Coma ◯ Rash ◯ Joint Pain

◯ Conjunctivitis ◯ Other **(Specify)** _____

Patient Travel and Epi Information

State/City/Country of Exposure: _____ **Travel Dates:** _____ **to** _____

State/City/Country of Exposure: _____ **Travel Dates:** _____ **to** _____

Epi Comments:
(If testing for Zika and exposure was sexual add details here) *

_____

*** Include partners travel history with departure and return dates, date of unprotected sex and symptom onset date.**

Lab Use Only

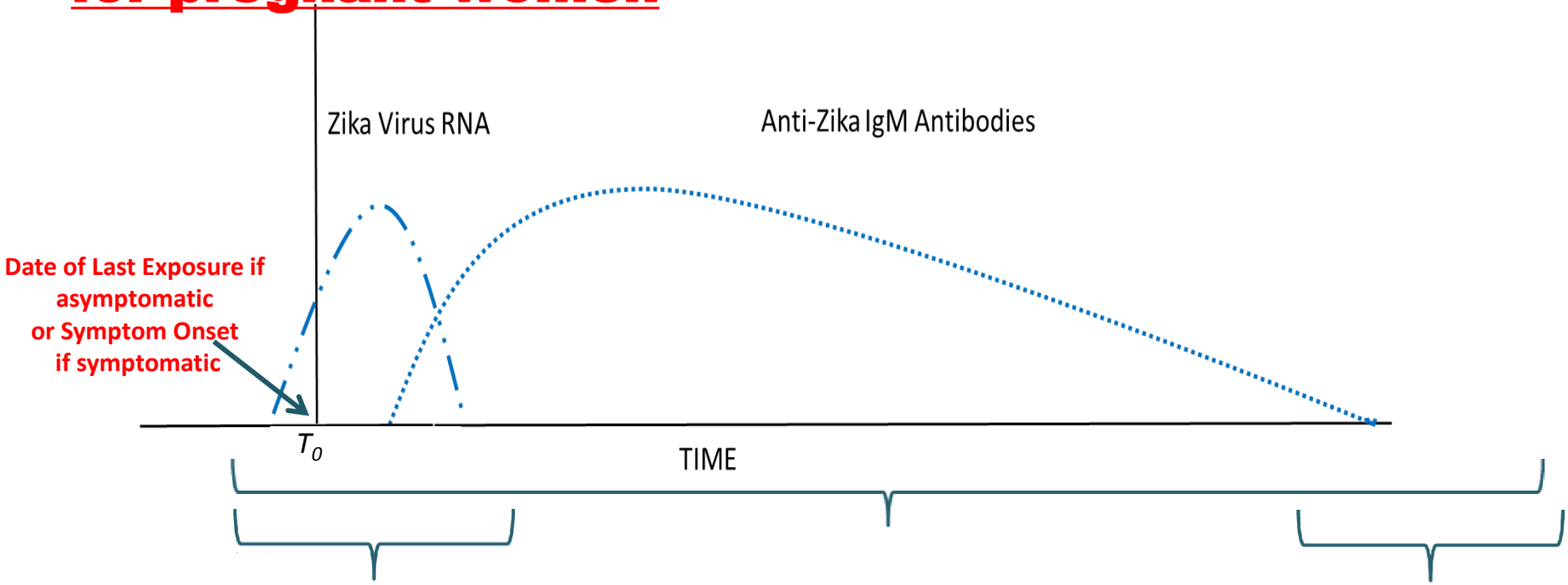
Bar Code Area Below

Please provide all requested information. Failure to complete this form entirely may result in testing delays.

Print Form

https://www.chicagohan.org/zforms

Provider guidance on choosing the right Zika test for pregnant women



Days since last exposure or symptom onset and specimen collection

First Testing Window

<2 weeks: Order RNA NAT (Trioplex rRT-PCR) of serum and urine.

Positive Result: ZIKA CONFIRMED.
Negative Result: Order Zika IgM two weeks after date of last exposure. If IgM is negative, no evidence of Zika infection.

Second Testing Window

2-12 weeks: Order Zika and dengue IgM of serum.

Positive, Inconclusive or Equivocal Result: Needs follow-up rRT-PCR, confirmatory PRNT*.
Negative Result: No evidence of Zika infection.

Third Testing Window

>12 weeks: Order Zika IgM of serum.

Positive Result: Needs confirmatory PRNT*.
Negative Result: Does not rule out recent Zika infection ; consider serial fetal ultrasounds. Test infant- refer to CDPH delivery checklist for more information

Specimens to collect at birth with maternal Zika exposure

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CHICAGO DEPARTMENT OF PUBLIC HEALTH

Maternal test status or birth anomaly	Test infant at birth?	Test Mother?	Save placenta and cord?**	Head US of infant prior to discharge
Not tested	Yes*	Yes*	Yes	Yes
Tested, results pending/unknown		No		
Tested > 12 weeks after exposure		No		
Confirmed Zika		No	No	
Unspecified flavivirus		No	Yes	
Birth defect or anomaly present		Yes*		

* serum, urine and whole blood should be collected; ** pathology specimen testing pending CDC consultation

Initial evaluation for infants with possible Zika infection

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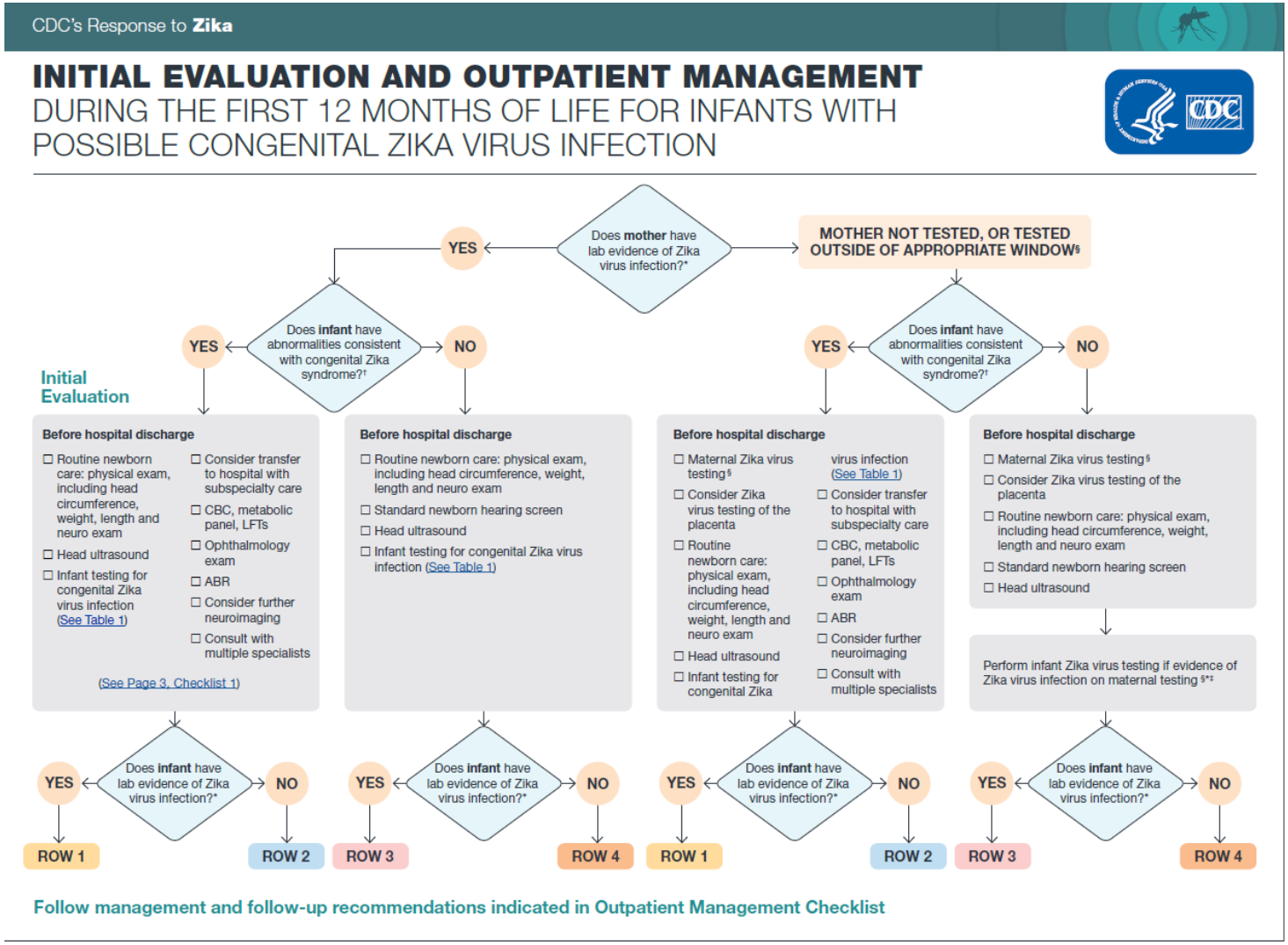

Zika Screening Tool for Pregnant Women at Labor and Delivery

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CHICAGO DEPARTMENT OF PUBLIC HEALTH

Questions to assess for possible exposure to Zika virus

- Do you live in or do you frequently travel (daily or weekly) to an area with active Zika virus transmission*?
- Have you traveled to an area with Zika during pregnancy or just before you became pregnant (8 weeks before conception or 6 weeks before your last menstrual period)?
- Have you had sex (vaginal, anal, or oral sex) without a condom or shared sex toys with a partner(s) who lives in or has traveled to an area with Zika?

"Yes" to ANY = Exposure
TESTING REQUIRED

"No" to ALL = No Exposure

Assess for prior testing

If Negative, and tested < 12 weeks post-exposure, no additional action needed

No testing → test mom, infant and collect placenta/umbilical cord

Lab evidence of Zika OR pending result OR negative result AND tested > 12 wks post exposure→ test infant and collect placenta/umbilical cord

Timing/type of ZIKV diagnostic tests

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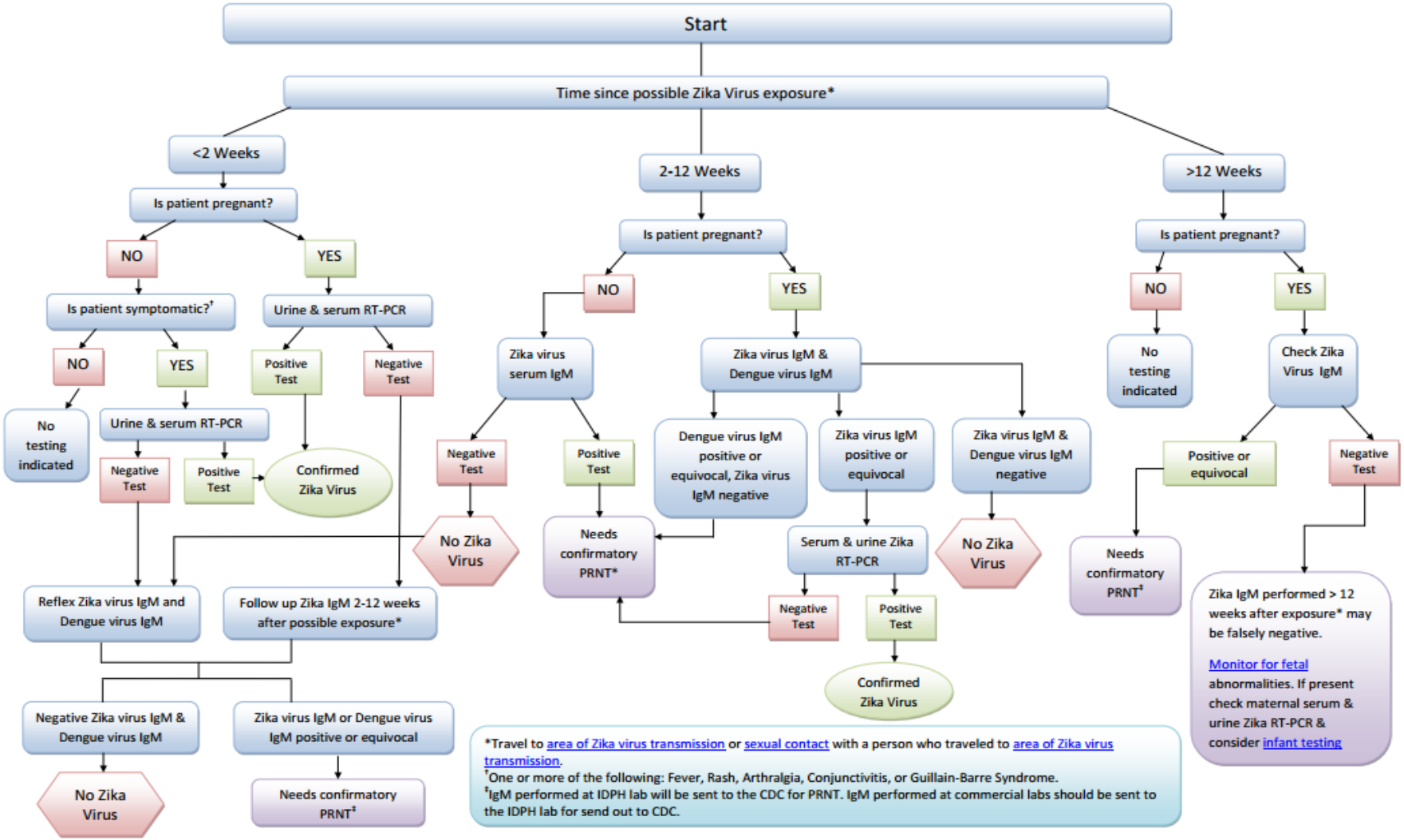

http://www.dph.illinois.gov/sites/default/files/publications/illinois-flowchart-choosing-appropriate-zikavirustestsfor-authorizedpatients91516-120616.pdf

High immigrant census tracts compared with resident receiving Zika testing, 2016

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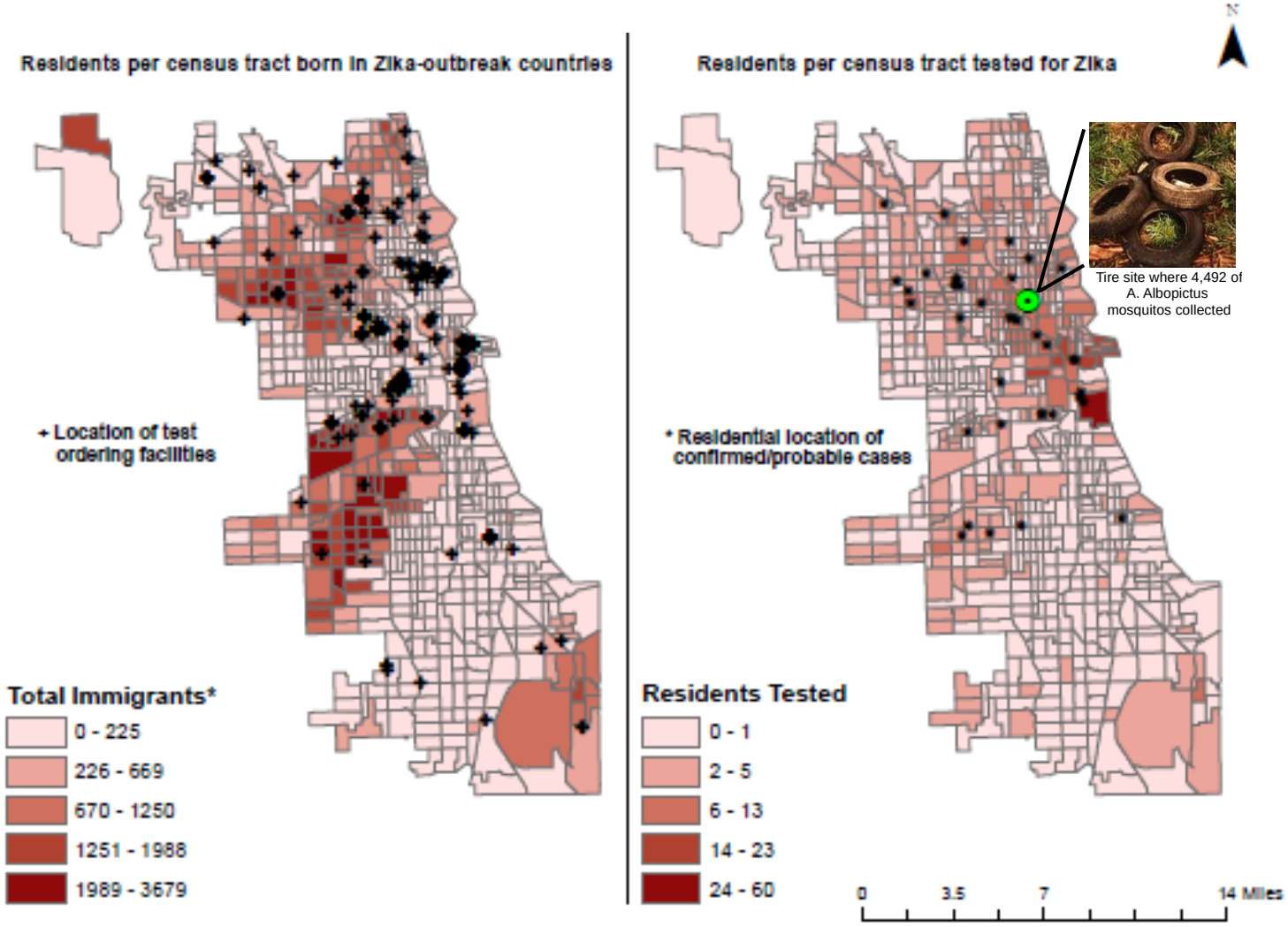

* Includes those born in the Caribbean, Central America, Argentina, Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Venezuela, Puerto Rico, and the U.S. Virgin Islands; Data Source: U.S. Census Bureau's American Community Survey, 2011-2015

Zika testing challenges

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- Zika virus serology (IgM) can be positive due to antibodies against related flaviviruses (e.g., dengue, yellow fever)
- Neutralizing antibody testing may discriminate between cross-reacting antibodies in primary flavivirus infections
- Difficult to distinguish infecting virus in people previously infected with or vaccinated against a related flavivirus
- Limitations of serological testing > 12 weeks after exposure/symptom onset