

Notes From the Field: Case Surveillance Issues Related to Zika Virus

January 17, 2018
2:00-3:00 PM (ET)



Council of State and Territorial Epidemiologists

Webinar Housekeeping



- **Today's webinar is being recorded**
 - The webinar recording and presentation slides will be available in the webinar library on CSTE's website:
<http://www.cste.org/?page=WebinarLibrary>
- **All lines have been muted**
- **There will be a question-and-answer session at the end of the webinar**
 - To ask a question, please use the Q&A box on the right side of your screen

Webinar Objectives



Participants will:

- Registrants will be able to describe the current epidemiology of Zika virus cases in the US
- Registrants will be able to describe systems used to identify and manage pregnant women with laboratory evidence of Zika virus infection
- Registrants will be able to describe the network of collaborations with other internal and external health officials and surveillance systems to ascertain Zika-associated cases



Centers for Disease Control and Prevention



Zika Virus Disease Surveillance in the United States

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Zika virus in the Americas

- In May 2015, the first locally acquired cases in the Americas were reported in Brazil
- Local mosquito-borne transmission has been reported in 48 countries or territories in the Americas
- Only countries without reported local transmission are Bermuda, Canada, Chile, and Uruguay

http://ais.paho.org/hip/viz/ed_zika_countrymap.asp

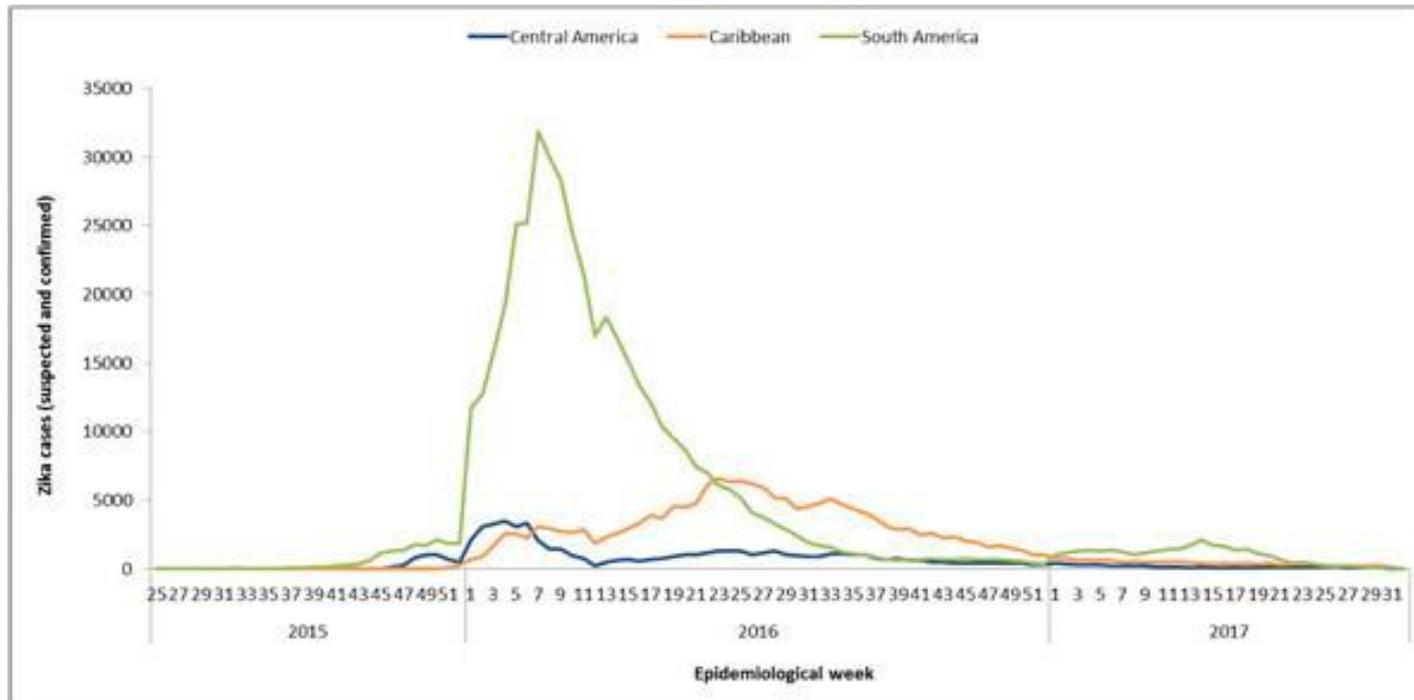
Suspected and confirmed Zika virus disease cases reported by country/territory in the Americas, 2015–2017 (as of Dec 21, 2017)

Country (N=48)	Region	(N=806,480)*	
Brazil	South America	369,013	(46%)
Colombia	South America	108,730	(13%)
Venezuela	South America	62,559	(8%)
Puerto Rico	Caribbean	40,562	(5%)
Martinique	Caribbean	36,701	(5%)
Honduras	Central America	32,693	(4%)
Guadeloupe	Caribbean	31,227	(4%)
El Salvador	Central America	11,829	(1%)

***28% of cases are lab-confirmed**

http://www.paho.org/hq/index.php?option=com_content&view=article&id=12390&Itemid=42090&lang=en

Suspected and confirmed Zika virus disease cases reported to PAHO by sub-region, 2015–2017 (as of Aug 25, 2017)



http://www.paho.org/hq/index.php?option=com_content&view=article&id=11599&Itemid=41691&lang=en

As of Dec 19, 2017, 45 of 52 countries/territories in the Americas have reported Zika virus disease cases in 2017

Country (N=45)	2017 (N=91,336)	2015–16 (N=714,636)	% reported in 2017	Population
Brazil	47,647	321,366	13%	209,553,000
Peru	6,929	1,958	78%	31,970,000
Curacao	5,721	820	87%	149,000
Puerto Rico	4,242	36,326	10%	3,681,000
Panama	4,010	3,339	55%	3,990,000
Mexico	3,956	7,475	35%	128,624,000
Costa Rica	3,186	6,835	32%	4,881,000
Ecuador	2,685	3,555	43%	16,506,000
Bolivia	2,494	897	74%	10,971,000
Colombia	2,063	106,552	2%	48,650,000
Belize	1,677	824	67%	371,000
Aruba	1,207	704	63%	114,000
Venezuela	1,060	61,615	2%	31,518,000

* Most reported cases are “suspected” without lab confirmation and classified by report date (not onset date)

http://www.paho.org/hq/index.php?option=com_content&view=article&id=12390&Itemid=42090&lang=en

Zika virus in the United States

- From 2007–2014, 14 Zika virus disease cases identified in US travelers
- Following introduction and spread in the Americas, cases among US travelers increased substantially
- In 2016, limited local mosquito-borne transmission identified in two states (Florida and Texas)
- In 2016, outbreaks in three US territories (Puerto Rico, US Virgin Islands, and American Samoa)

Duffy et al. *N Eng J Med* 2009; Hennessey et al. *Am J Trop Med Hyg* 2016; Armstrong et al. *MMWR* 2016; Walker et al. *MMWR* 2016; Likos et al. *MMWR* 2016; Dirlikov et al. *MMWR* 2016.

Laboratory-confirmed Zika virus disease cases reported to ArboNET by US states, 2016–2017 (as of Dec 20, 2017)

	2016 (N=5,102)		2017 (N=385)	
Travelers	4,830	(95%)	378	(98%)
Locally acquired*	224	(4%)	3	(1%)
Other routes [†]	48	(1%)	4	(1%)

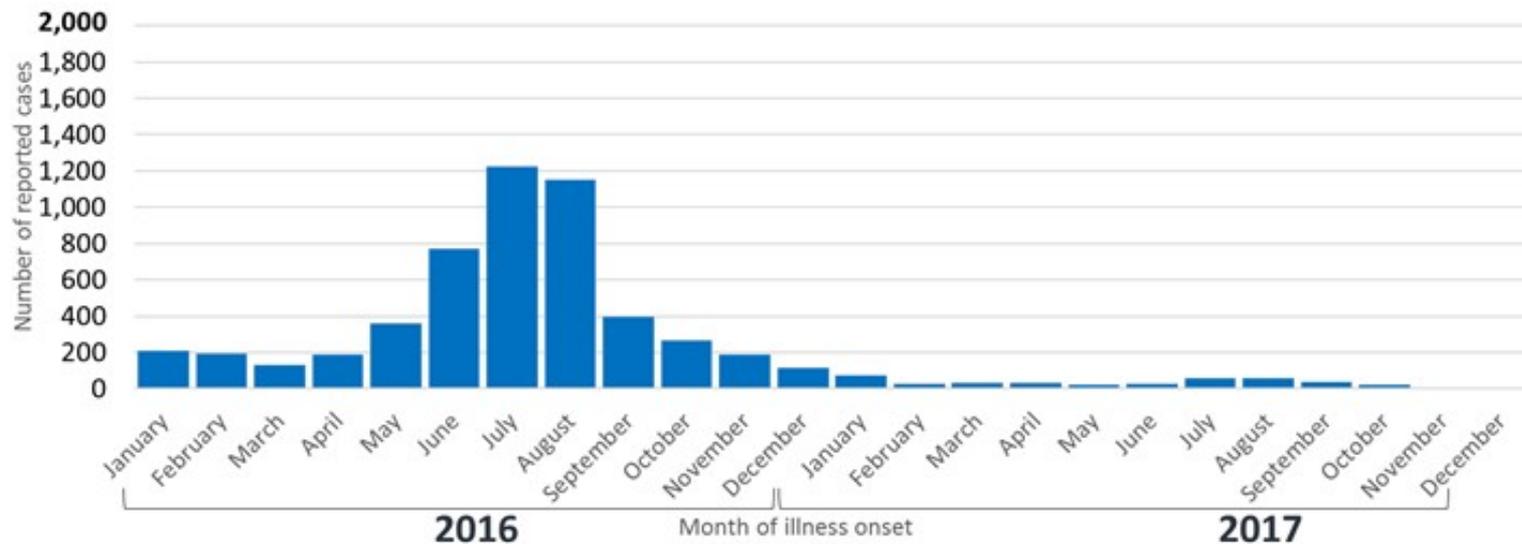
*Presumed local mosquito-borne transmission in Florida (N=219) and Texas (N=8).

[†]Includes sexual transmission (N=50), laboratory transmission (N=1), and unknown route (N=1).

<https://www.cdc.gov/zika/reporting/case-counts.html>



Laboratory-confirmed Zika virus disease cases reported to ArboNET by US states, 2016–2017 (as of Dec 20, 2017)

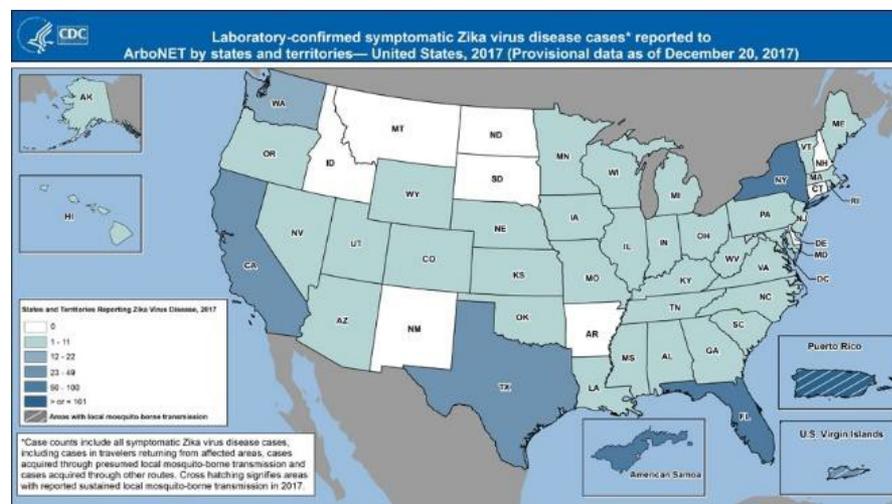
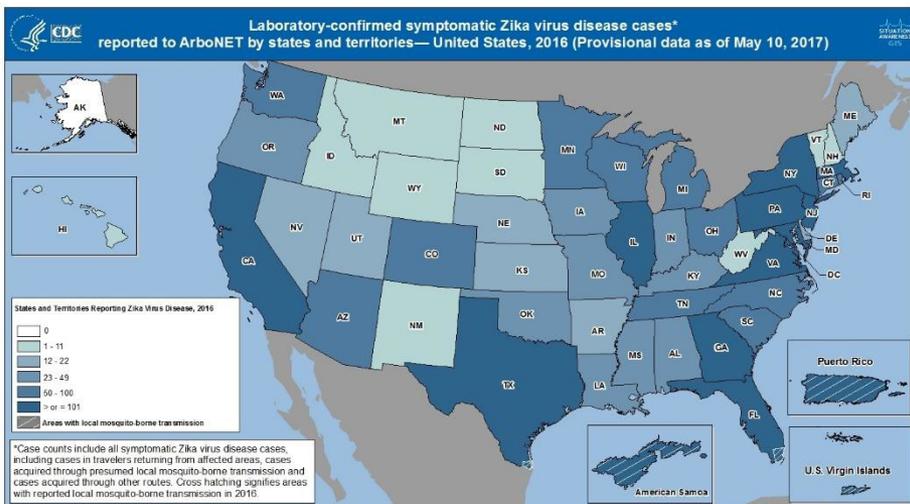


<https://www.cdc.gov/zika/reporting/case-counts.html>

State or territory of residence for reported Zika virus disease cases — United States, 2016-2017 (as of Dec 20, 2017)

2016

2017



<https://www.cdc.gov/zika/reporting/case-counts.html>



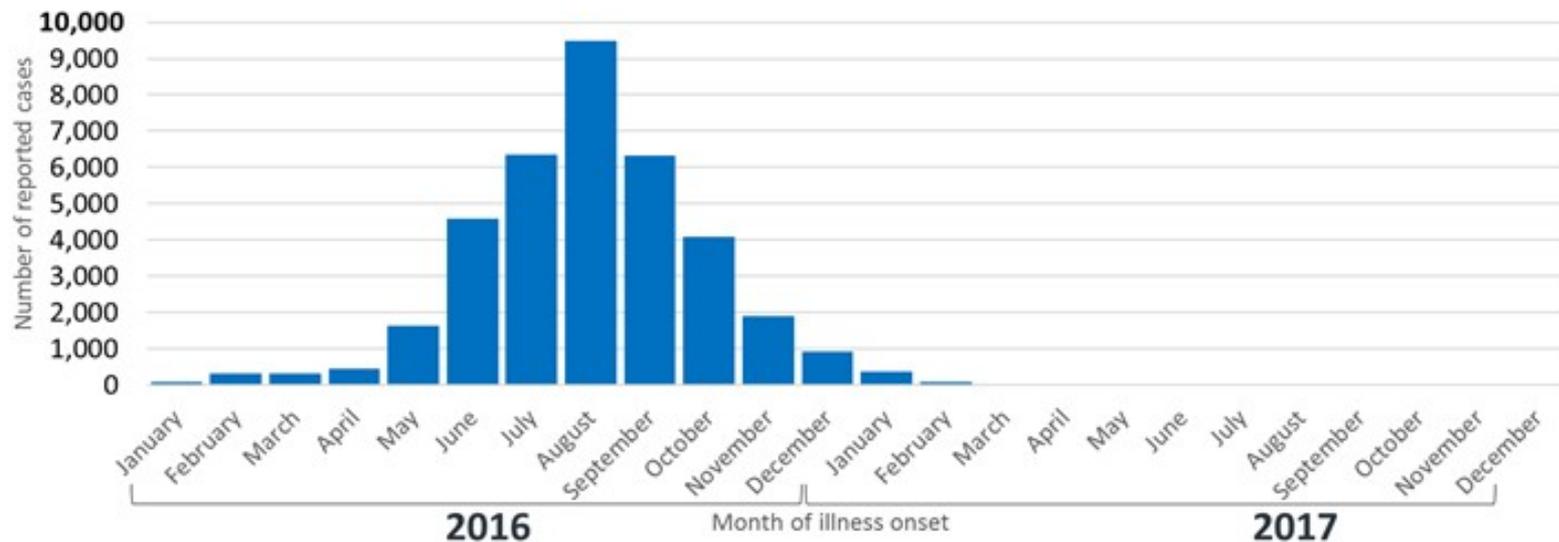
Territory of residence for reported Zika virus disease cases, 2016–2017 (as of Dec 20, 2017)

Territory	2016 (N=36,079)		2017 (N=584)	
Puerto Rico	34,963	(97%)	494	(81%)
US Virgin Islands	987	(3%)	45	(7%)
American Samoa	129	(<1%)	72	(12%)

<https://www.cdc.gov/zika/reporting/case-counts.html>



Laboratory-confirmed Zika virus disease cases reported to ArboNET by US territories, 2016–2017 (as of Dec 20, 2017)



<https://www.cdc.gov/zika/reporting/case-counts.html>

Zika virus epidemiology in the Americas: Summary

- Large outbreaks in the Americas peaked in 2016 with substantially decreased activity in 2017
- Smaller outbreaks continue in focal areas of some countries (e.g., Panama, Peru, Ecuador)
- Incidence and disease risk among US travelers has followed the epidemiology of outbreaks in the Americas
- US territories have markedly decreased incidence in 2017 but sporadic cases still reported

Future projections

- In Puerto Rico and other dengue-endemic areas, herd immunity will likely reduce transmission of Zika virus in the near-future but not eliminate it
- For US travelers, risk will continue but will likely decrease and show some seasonality
- In US states, limited local transmission may occur with sporadic cases or clusters
- Improved surveillance and testing practices in the US may lead to higher case numbers compared to what we have seen with dengue and chikungunya

Case Identification

Zika Virus Disease Surveillance

- Consider Zika virus disease in travelers with acute onset of fever, rash, arthralgia, or conjunctivitis within 2 weeks after return
- Ask all pregnant women about possible Zika virus exposure before and during the current pregnancy at every prenatal care visit
- Assess infants of women with possible exposure during pregnancy
 - See guidance to determine appropriate evaluation*
- Blood centers should report positive results identified in blood donations to health departments
- Be aware of possible local transmission in areas where *Aedes* species mosquitoes are active

*Adebanjo T, et al. Update: Interim Guidance for the Diagnosis, Evaluation, and Management of Infants with Possible Congenital Zika Virus Infection — United States, October 2017. *MMWR Morbidity and Mortality Weekly Report* 2017;66:1089–1099. DOI: <http://dx.doi.org/10.15585/mmwr.mm6641a1>.

Reporting Zika Virus Disease Cases

- Zika virus disease is a nationally notifiable disease
 - Healthcare providers are encouraged to report suspected local transmission cases or other unusual clinical or transmission scenarios to their local or state health department
 - Laboratories should report test results to health departments to facilitate timely investigation and classification of cases
 - State health departments should report cases meeting the CSTE probable and confirmed case definitions to ArboNET
- Timely reporting allows health departments to assess and reduce the risk of local transmission or mitigate further spread

<https://www.cdc.gov/zika/reporting/index.html>

Zika virus diagnostic testing assays

- Nucleic acid test (NAT)
 - RNA may be detected in serum, urine, whole blood, amniotic fluid, semen, CSF, and tissues
- Antibody testing in serum
 - Immunoglobulin (Ig) M antibody ELISA
 - Plaque reduction neutralization test (PRNT)

Diagnostic Challenges

- Negative NAT does not exclude acute Zika virus infection since RNA may have cleared from blood or other body fluid or tissue
- Zika virus IgM antibodies can persist for months in some people
 - determining timing of infection can be difficult
- Serology can be positive due to antibodies against related flaviviruses (e.g., dengue and yellow fever viruses)
 - difficult to distinguish Zika virus infection in people with prior flavivirus exposure
- Declining pretest probability

Declining trend in reported cases of Zika virus infection leads to lower pretest probability and a higher proportion of positive test results being false

Disease incidence	Sensitivity	Specificity	Positive predictive value	False positive rate*
25%	98%	98%	94%	6%
10%	98%	98%	85%	15%
1%	98%	98%	33%	67%
0.1%	98%	98%	5%	95%
0.01%	98%	98%	<1%	>99%

*False positive rate=false positive results/(true positive results + false positive results)

Zika virus testing for symptomatic* non-pregnant patients with a possible Zika virus exposure†

- NAT testing should be performed on specimens collected <14 days post-symptom onset
- IgM testing of serum should be performed on specimens with a negative NAT or those collected ≥ 14 days post-symptom onset
- A non-negative Zika virus IgM should be confirmed by PRNT testing

*Acute onset of fever, maculopapular rash, arthralgia, or conjunctivitis.

†Resided in or recently traveled to an area with mosquito-borne transmission or sex with a partner who resided in or traveled to an area with local transmission

<https://www.cdc.gov/zika/hc-providers/testing-guidance.html>

Zika virus testing for pregnant women

- Symptomatic pregnant women with possible Zika virus exposure
 - Concurrent testing of serum and urine by NAT and Zika virus IgM testing of serum
 - As soon as possible and up to 12 weeks after symptom onset
- Asymptomatic pregnant women with ongoing possible Zika virus exposure
 - NAT testing is recommended three times during pregnancy
 - Initial prenatal care visit, followed by two additional NAT tests performed during pregnancy
- Asymptomatic pregnant women with time limited exposure
 - Routine testing no longer recommended
 - Consider as shared decision between patient and provider

Enhanced Surveillance Strategies

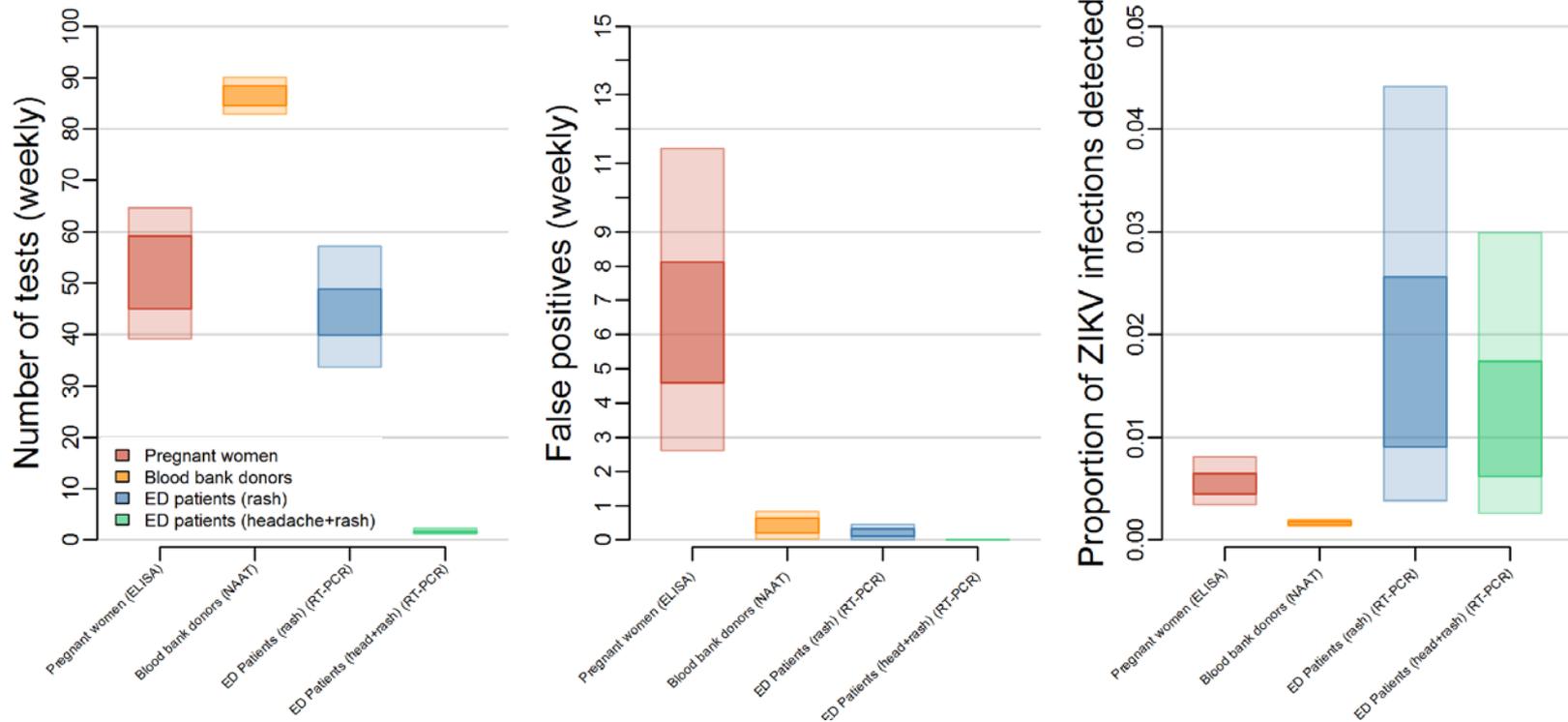
Detecting Local Transmission

Modeling Question

- In areas at risk for local transmission, what is the most effective way to detect local mosquito-borne transmission?
- Possible enhanced surveillance strategies considered:
 - Test all pregnant women twice during pregnancy (IgM)
 - Test all blood bank donors (NAT)
 - Test symptomatic people visiting the ED with specific symptoms (NAT)
- Please refer to the paper listed below for other key modeling assumptions

Russell S, Ryff K, Gould C, Martin S, Johansson M. Detecting Local Zika Virus Transmission in the Continental United States: A Comparison of Surveillance Strategies. *PLoS currents*. 2017.

Expected number of tests, false positive results, and proportion of infections detected



*Population = 100,000, numbers scale directly with population size

Estimated strategy performance (Zika virus infection incidence of 1 per 10,000 per week, population of 100,000)

Surveillance strategy	Weekly probability of detection (95% UI)	Number of tests (95% UI)
Pregnant women	5% (2.9%, 8.2%)	50 (35, 65)
Blood donors	1.2% (0.9%, 1.5%)	87 (83, 90)
ED ^{II} patients (rash)	15% (2.9%, 39%)	46 (35, 60)
ED ^{II} patients (rash + headache)	10% (2%, 29%)	2.5 (1.4, 5.2)
ED ^{II} patients (two or more symptoms)	14% (3%, 38%)	10 (7.1, 14)
ED ^{II} patients (three or more symptoms)	11% (2%, 30%)	0.57 (0.30, 0.92)
ED ^{II} patients (rash + one other symptom)	13% (3%, 35%)	6.2 (4.5, 8.3)

i. Uncertainty Interval

ii. Emergency Department

Conclusions

- The probability of detection for a given strategy depends on incidence of infection and population size
- The expected proportion of infections detected by any system is low
- Testing patients with Zika symptoms is likely more effective than testing pregnant women or blood donors
- The optimal strategy identified was to test patients with at least two Zika virus disease symptoms
 - increases probability of detection and results in fewer false positive results

Thank you, for more information visit:

<https://www.cdc.gov/zika/index.html>

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



Surveillance and Management of Pregnant Women with Laboratory Evidence of Zika Virus Infection and their Infants in New York City (2016-2017)

Gili Hrusa Castillo, MPH

Maura Lash, MPH, BSN, RN

CSFE Webinar
January 17, 2018

Part I: Surveillance of Pregnant Women

- Present a timeline of surveillance and case management of pregnant women with lab evidence of Zika virus.

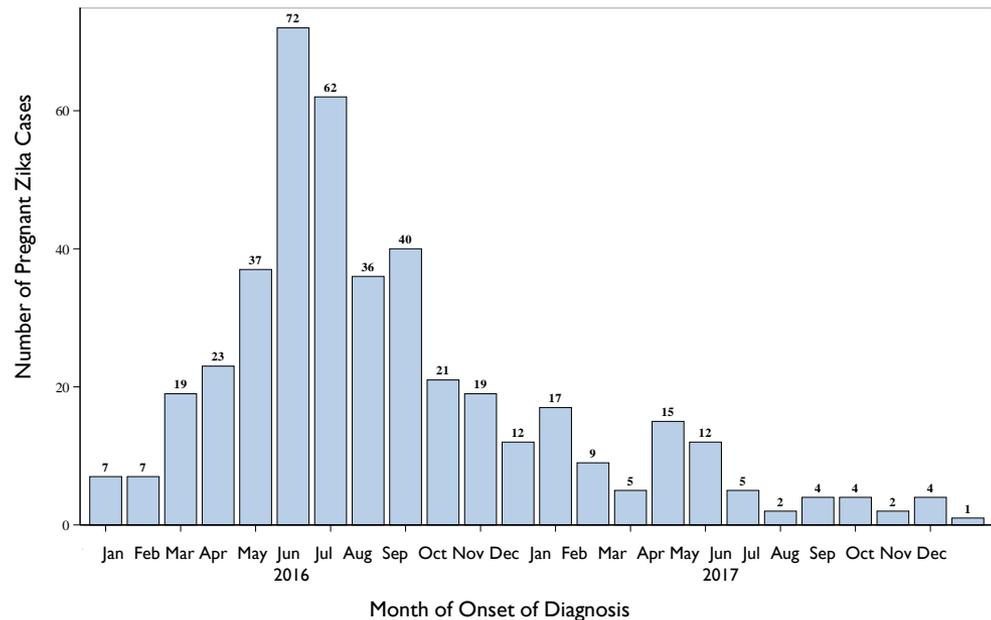
Overview of NYC

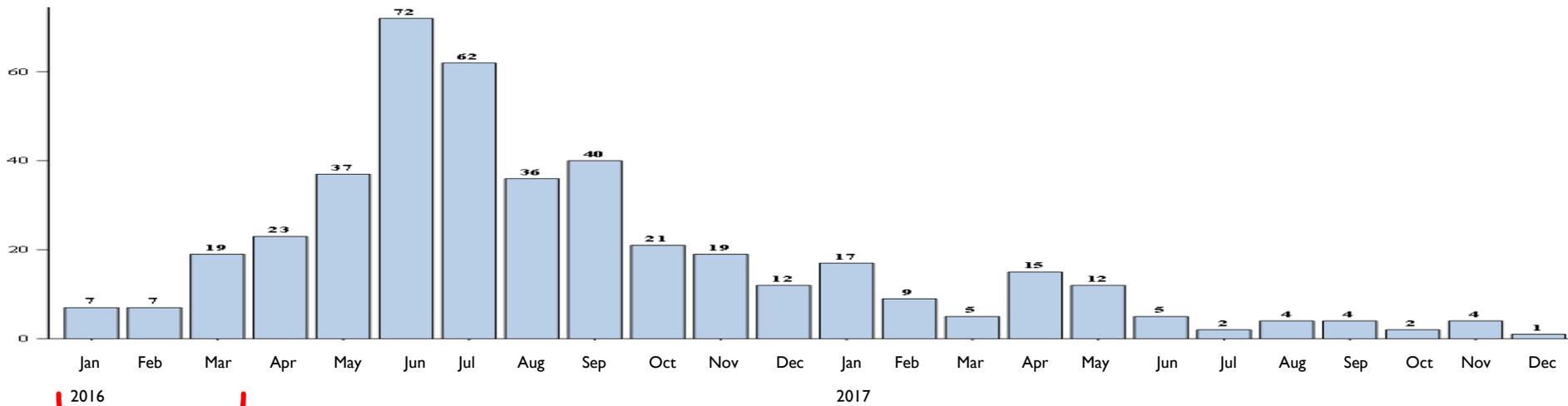
- Population 8.5 million residents (2016)
 - Close to 40% of residents are foreign-born
- Travel volume from Zika-affected areas (2015): 6.5 million passengers
- Total ~60 hospitals
 - 39 handle deliveries

Zika Virus in Pregnant Women (2016-2017)

- Total pregnant cases: 435
- Median age: 28 years
- 125 (29%) symptomatic
- Top 3 countries visited:
 - Dominican Republic, Jamaica, and Haiti

Total Number of Pregnant Zika Cases by Month of Onset or Diagnosis in NYC, 2016-2017





- Increasing test requests
- Expanded testing to asymptomatic pregnant women

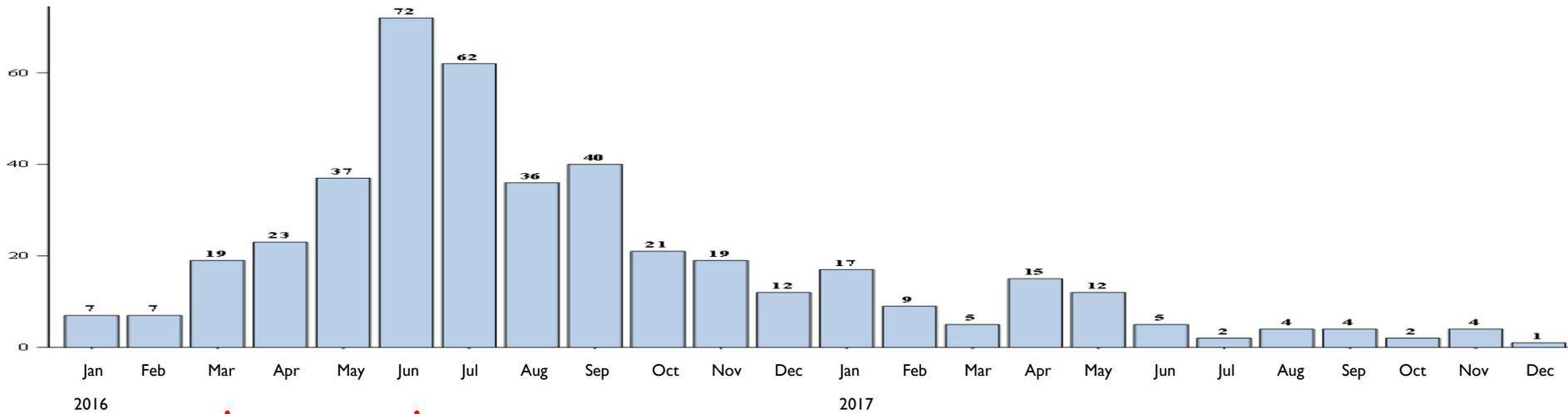


➤ Zika Testing Call Center

Zika Testing Call Center

- Modeled after the Ebola call center
- Screened test requests using algorithm
- Completed lab forms
- Arranged courier to transport specimens to NYC Public Health Laboratory

A detailed form titled "LABORATORY TEST REQUEST: ZIKA" from NYC Health. The form includes sections for patient information, test type (Blood, Saliva, Urine), and test results. It also has checkboxes for "ABOVE-US RESOLUTION PANEL" and "BELOW-US RESOLUTION PANEL". The form is numbered "NYC 001 2016".



- Increasing Zika + pregnant women



- Zika Surveillance Coordinator
- Zika Team Investigators

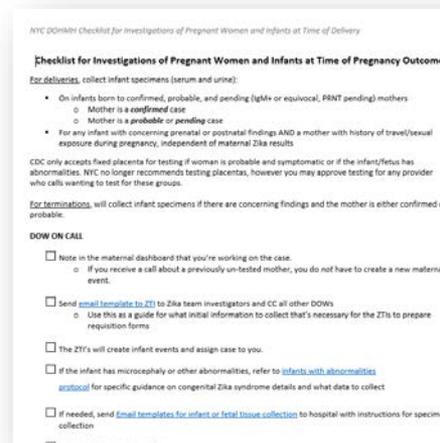
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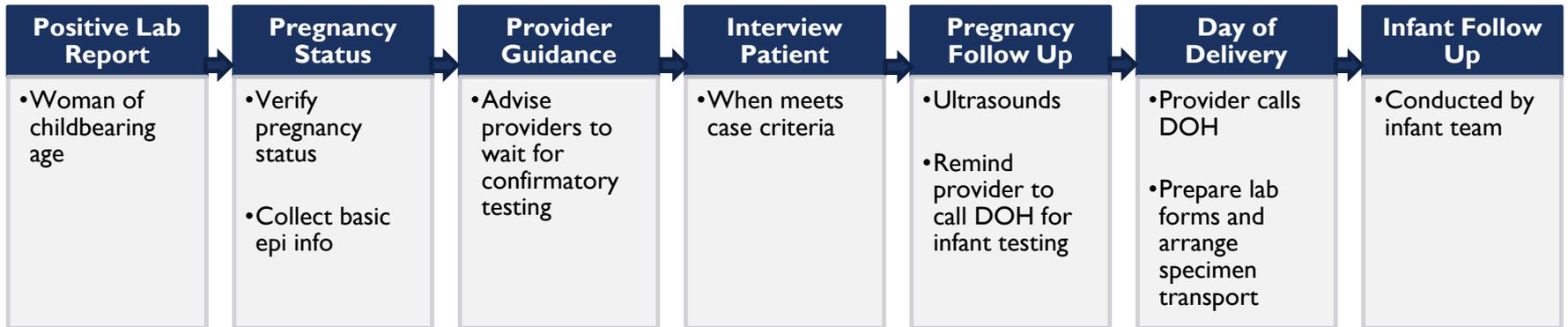


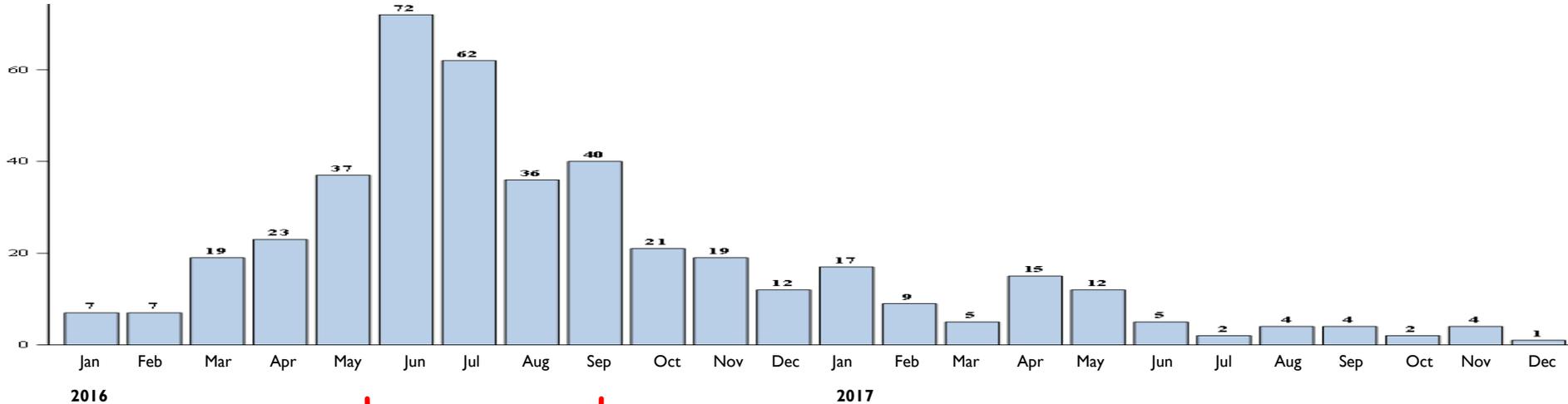
- Zika Testing Call Center

Zika Surveillance Coordinator and Zika Team Investigators

- Zika Surveillance Coordinator
 - Oversee surveillance and management of pregnant women
 - Develop protocols
 - Train staff
- Zika Team Investigators
 - Handle case investigations, data collection and track pregnant women until infant is born







○ Improvements to workflow



➤ US requests
➤ Line lists of active pregnancies



➤ Zika Surveillance Coordinator
➤ Zika Team Investigators



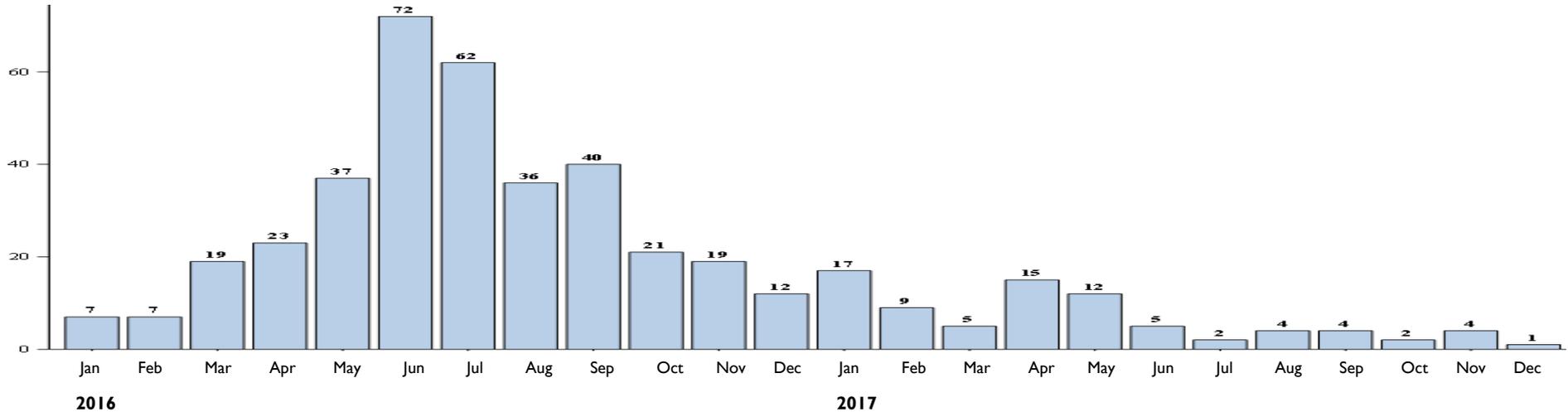
➤ Zika Testing Call Center

Improvements and Changes to Workflow

- Ultrasound Reports
- Directory of points of contact by facility
- Line lists of pending pregnancies for large volume facilities
- Hiring of Zika doctor to take clinical calls
- Switch from paper laboratory forms to electronic ordering system

HOSPITAL A LINELIST JULY 2016

CASE_ID	FIRST NAME	LAST NAME	MOM BIRTH DATE	CURRENTLY PREGNANT DUE DATE	PREGNANCY OUTCOME	DISEASE STATUS
100406971	xxxx	xxxx	x/x/xx	July/x/2016	Mother still pregnant	Confirmed
100411477	xxxx	xxxx	x/x/xx	July/x/2016	Mother still pregnant	Confirmed
100427465	xxxx	xxxx	x/x/xx	July/x/2016	Mother still pregnant	Probable
100434705	xxxx	xxxx	x/x/xx	July/x/2016	Unknown	Pending (IgM positive)
100438318	xxxx	xxxx	x/x/xx	July/x/2016	Unknown	Pending (IgM positive)
100414290	xxxx	xxxx	x/x/xx	July/x/2016	Mother still pregnant	Probable
100419221	xxxx	xxxx	x/x/xx	July/x/2016	Mother still pregnant	Probable
100399051	xxxx	xxxx	x/x/xx	July/x/2016	Mother still pregnant	Confirmed



- Increasing test requests
- Expanded testing to asymptomatic pregnant women

- Increasing Zika + pregnant women

- Improvements to workflow

- Ongoing challenges



- Zika Testing Call Center

- Zika Surveillance Coordinator
- Zika Team Investigators

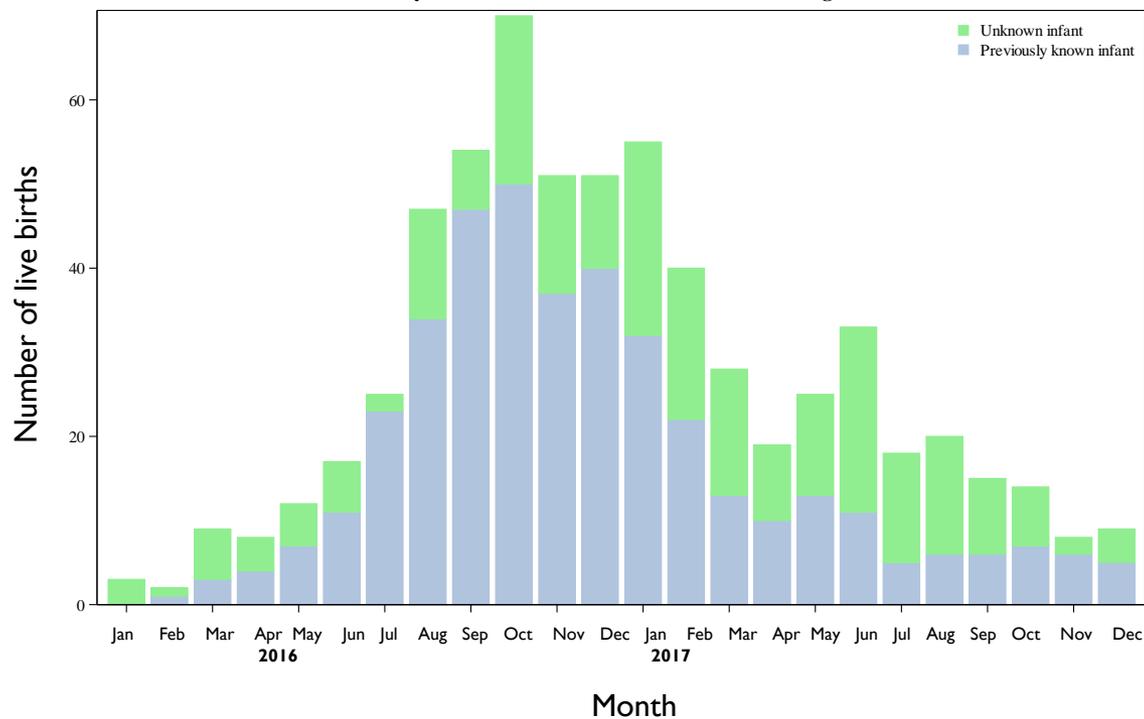
- US requests
- Line lists of active pregnancies
- Zika MD

- Commercial labs
- Mothers arriving late in pregnancy/not tested prior to delivery

Ongoing Challenges

- Commercial labs
 - Relieved burden of public health lab, but more work for epidemiology investigation
 - Missing epi information normally collected by call center
 - Issues related to inappropriate/incomplete testing
- Managing women who arrive late in pregnancy/never tested

Monthly count of live births to women with lab evidence of Zika in NYC (2016-2017)



Patient Education Tool

Zika Wallet Cards

- Offered at time of interview
- Opportunity to encourage infant testing

Health Care Providers for Mother and Infant

PROVIDER 1
Name: _____
Facility: _____
Phone Number: _____

PROVIDER 2
Name: _____
Facility: _____
Phone Number: _____

PROVIDER 3
Name: _____
Facility: _____
Phone Number: _____

For any questions or for assistance filling out this card, call the NYC Provider Access Line at 1-866-692-3641.

NYC Health

INFANT'S INFORMATION
Name _____ Date of Birth _____ Gestational age at birth _____

Test Date	URINE PCR			SEROUM PCR			Zika IgM		
	<input type="checkbox"/> Pos	<input type="checkbox"/> Neg	<input type="checkbox"/> Other	<input type="checkbox"/> Pos	<input type="checkbox"/> Neg	<input type="checkbox"/> Other	<input type="checkbox"/> Pos	<input type="checkbox"/> Neg	<input type="checkbox"/> Other
	<input type="checkbox"/> Pos	<input type="checkbox"/> Neg	<input type="checkbox"/> Other	<input type="checkbox"/> Pos	<input type="checkbox"/> Neg	<input type="checkbox"/> Other	<input type="checkbox"/> Pos	<input type="checkbox"/> Neg	<input type="checkbox"/> Other

OVERALL ZIKA INFECTION INTERPRETATION:
 Zika Laboratory Positive (Either Pos PCR or IgM with Pos Zika PRINT)
 Retest Needed at 12-15 Months
 Zika Laboratory Negative (Does not rule out past Zika infection)
 pending/Unknown/Other

HEAD CIRCUMFERENCE		WEIGHT	LENGTH
DATE	AGE		

Cranial Ultrasound Results: _____ Date: _____
Hearing Test Results: _____ Date: _____

Part II: Surveillance of Infants Born to Women with Laboratory Evidence of Zika Virus Infection

Part II: Surveillance of Infants

- Summarize NYC infants reported to US Zika Pregnancy and Infant Registry (USZPIR)
- Describe methods employed to track infants for the USZPIR



Pregnant Women and Newborns in NYC	# of Cases
Pregnant women with laboratory evidence of Zika virus infection	435
Newborns with laboratory evidence of Zika virus infection	22
Newborns with birth defects consistent with Zika virus infection during pregnancy	20

US Zika Pregnancy and Infant Registry

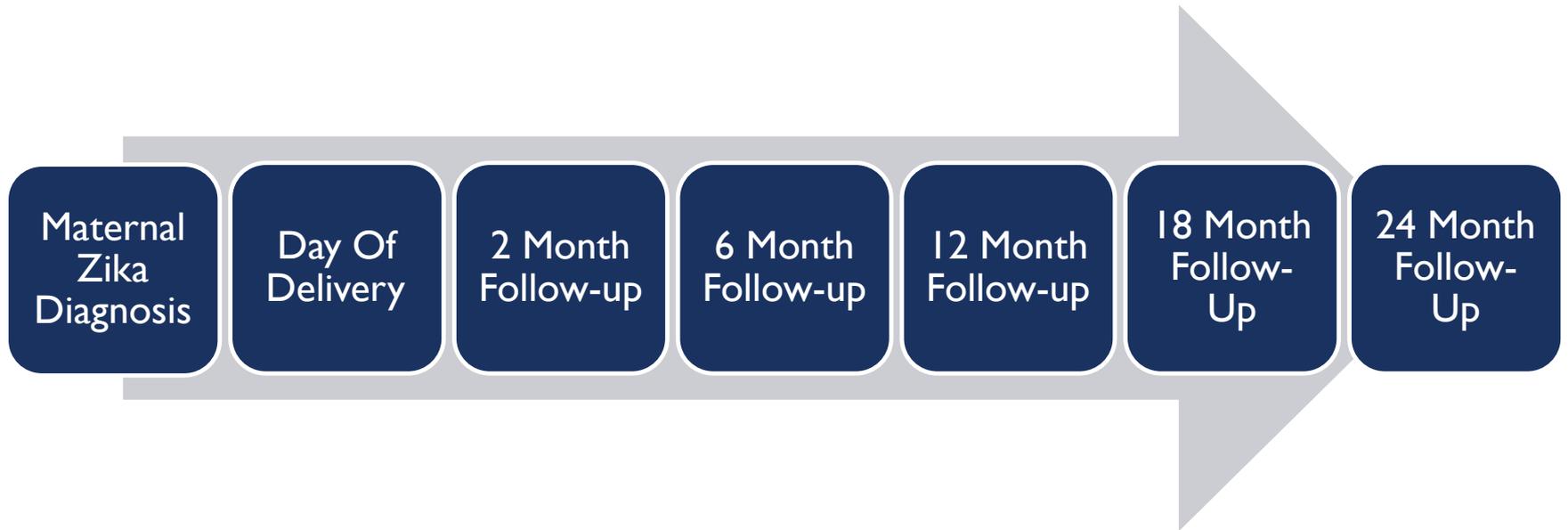
CDC's Response to **Zika**

US ZIKA PREGNANCY REGISTRY Health Departments: How to Participate

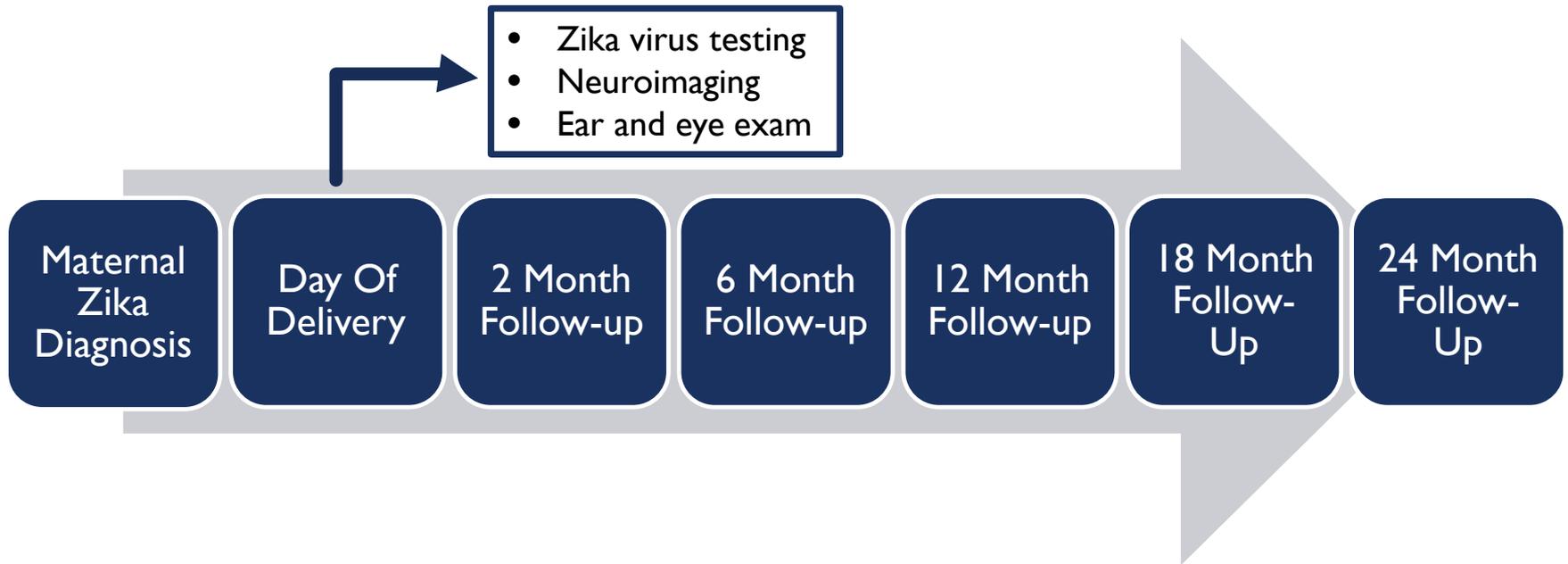


Zika virus infection during pregnancy has been linked to [adverse outcomes](#) including pregnancy loss and microcephaly, absent or poorly developed brain structures, defects of the eye and impaired growth in fetuses and infants. Information about the timing, absolute risk, and spectrum of outcomes associated with Zika virus infection during pregnancy is needed to guide testing, clinical evaluation, and management and public health action related to Zika virus.

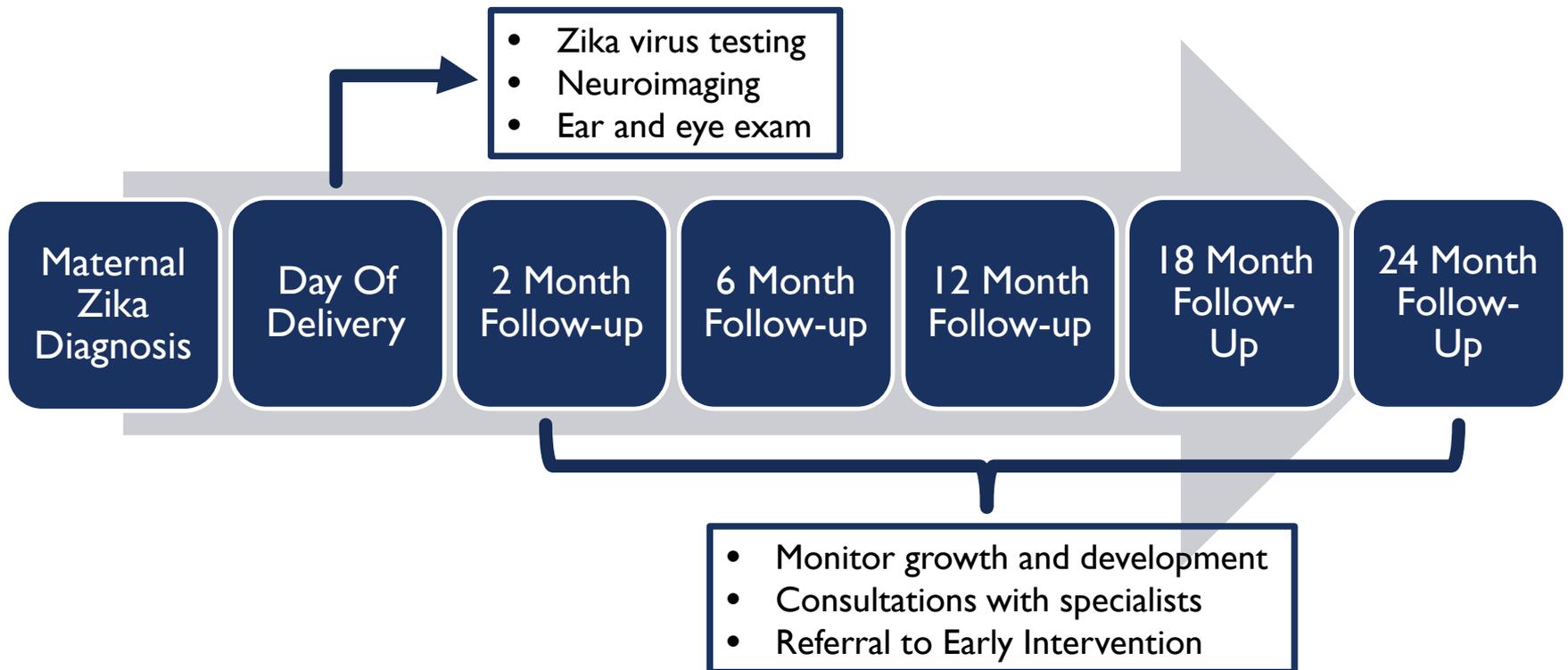
Maternal and Infant Follow-up



Maternal and Infant Follow-up

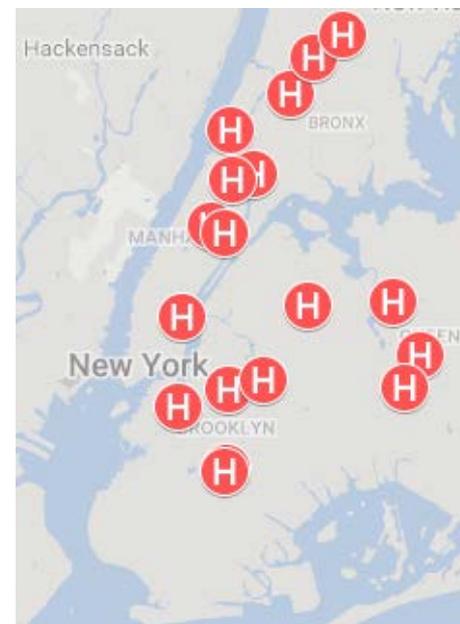


Maternal and Infant Follow-up



Challenges

- Infants missed at birth
- Large number of facilities
- Mobile population



- 39 Birth Hospitals
- ~70 Private Clinics

Finding Infants Missed At Birth

- Match Zika+ pregnant women with their newborns using birth records data
- Provides the infant's legal name, date of birth and birth outcome facility







- Mother's**
- ✓ **Name**
 - ✓ **Date of Birth**
 - ✓ **Lab Results**



- Mother's**
- ✓ **Name**
- ✓ **Date of Birth**
- ✓ **Lab Results**





Mother's
✓ **Name**
✓ **Date of Birth**
✓ **Lab Results**



Infant's
✓ **Name**
✓ **Date of Birth**
✓ **Birth Facility**

Finding Where Infants Seek Care



New York City
Citywide Immunization Registry (CIR)

- Database of patient immunization records submitted by health care providers
- Provides the name/contact information of the outpatient provider and the date of vaccinations

Finding Where Infants Seek Care



Finding Where Infants Seek Care



**Infant missed last
appointment five
months ago**

Finding Where Infants Seek Care



**Infant missed last
appointment five
months ago**



CHILD & TEEN IMMUNIZATION RECORD
Always carry this record with you and have your healthcare professional or clinic keep it up to date.

Last name First name M.I.

Birthdate: - -
(mo.) (day) (yr)

Patient Number: _____

Printed by Immunization Action Coalition, Saint Paul, MN
www.immunize.org • www.vaccineinformation.org

Medical notes (e.g., allergies, vaccine reactions):

Healthcare provider: List the month/year for each vaccination given. Record the generic abbreviation (e.g., PCV, DTaP+HepB-IPV), not the trade name. For combination vaccines, fill in a row for each separate antigen in the combination.
Rev #10/02 (07)

Finding Where Infants Seek Care



Infant missed last appointment five months ago

CHILD & TEEN IMMUNIZATION RECORD
Always carry this record with you and have your healthcare professional or clinic keep it up to date.

Last name: First name: M.I.
Birthdate: (mo.) - (day) - (yr.)
Patient Number:

Printed by Immunization Action Coalition, Saint Paul, MN
www.immunize.org • www.vaccineinformation.org

Medical notes (e.g., allergies, vaccine reactions):

Healthcare provider: List the month/year for each vaccination given. Record the generic abbreviation (e.g., PCV, DTaP-HaB-IPV), not the trade name. For combination vaccines, list in a row for each separate antigen in the combination.
Rev. #10/02 (02)

✓ **Date of Vaccinations**
✓ **Outpatient Provider**

Finding Information Electronically

- Regional Health Information Organizations (RHIOs)
 - Collects electronic health records from participating providers
- The data available on the RHIOs can include patient demographics, visit summaries, radiology and laboratory results



Lessons Learned

- Education and outreach with external partners
- Utilizing resources within the health department
- Collaboration with other health departments

Thank You

Acknowledgements

- New York City Department of Health And Mental Hygiene
- New York State Department of Health
- Council Of State And Territorial Epidemiologists
- Centers For Disease Control and Prevention



Coordination and Integration of Zika Birth Defects Surveillance

Mahsa M. Yazdy, PhD, MPH
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Bureau of Family Health and Nutrition
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Zika Birth Defects Surveillance (ZBDS)

US Zika Pregnancy and Infant Registry and Zika Birth Defects Surveillance

US Zika Pregnancy and Infant Registry (USZPIR)

Pregnant women and infants with laboratory evidence of possible Zika virus infection

Surveillance based on possible prenatal Zika exposure

Zika Birth Defects Surveillance (ZBDS)

All infants with Zika related birth defects, with and without congenital Zika exposure

Surveillance based on outcome of a birth defect associated with Zika

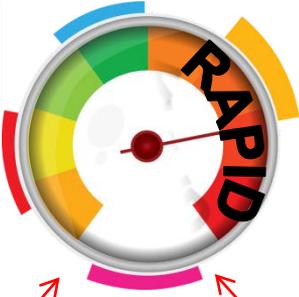
Zika Birth Defects Surveillance (ZBDS)

- In MA, Center for Birth Defects Research and Prevention
- Zika associated defects:
 - Brain abnormalities (incl. microcephaly)
 - Central nervous system defects
 - Congenital contractures
 - Certain eye abnormalities
 - Congenital deafness
- Rapid surveillance to identify all infants with Zika associated birth defect, **regardless of Zika exposure**



MA Birth Defects Monitoring Program

Receive reports of cases



Abstractor reviews hospital records



Abstract info on cases



Prioritize ZBDS cases

Remote access to EMRs

Data available for surveillance and research

Confirmed cases included in birth defects registry

Clinical review and classification of cases

research **Action**

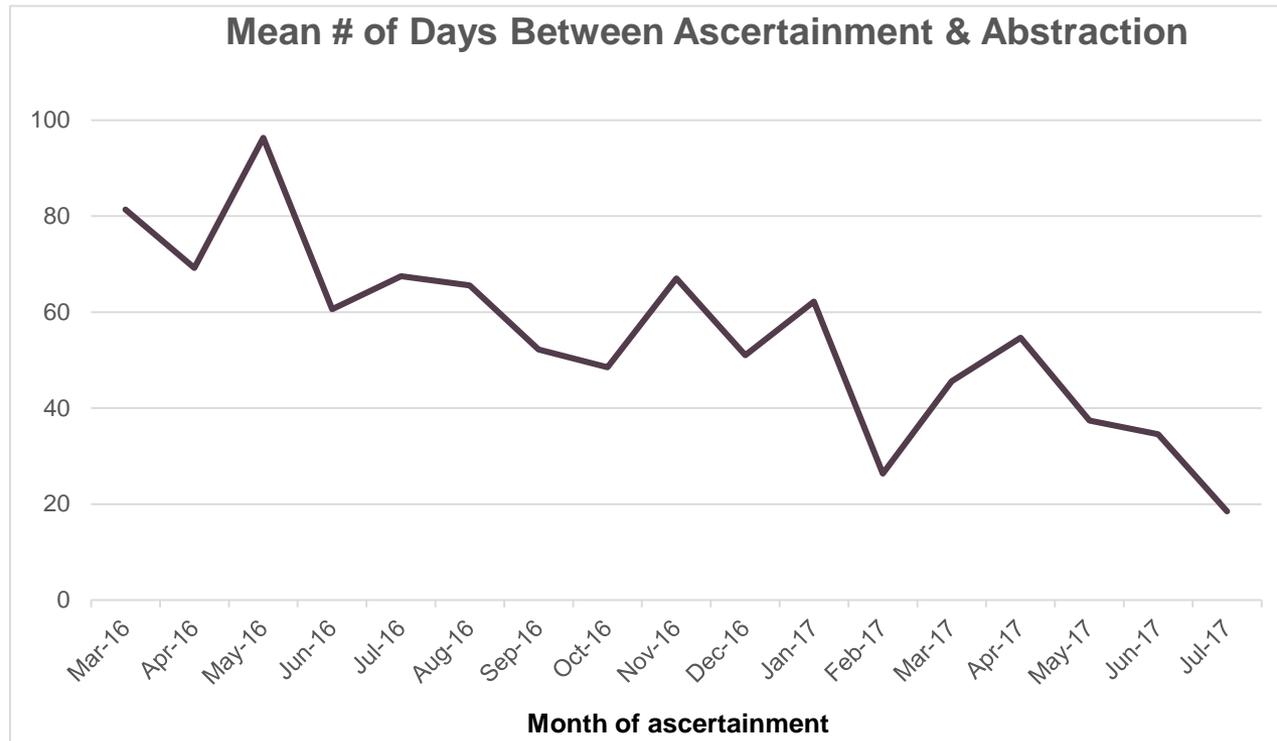


Rapid Reporting for ZBDS

- Prioritize abstraction of ZBDS cases
 - Push cases to the top of abstraction list
- Decrease time to abstraction through remote electronic access to medical records
 - Access at 4 tertiary hospitals account for 35% of abstractions

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New Zika-Associated Conditions

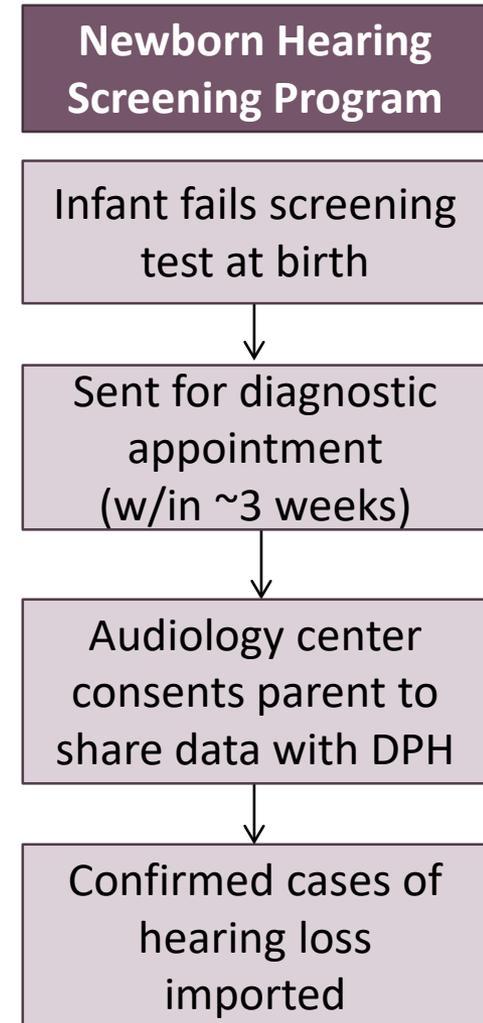
New conditions not previously included in surveillance

- E.g., Intracranial/intraocular calcifications, heterotopia, ventriculomegaly beyond mild
 - Codes are in the range of those submitted by hospitals
 - **Solution:** add codes to list of abstracted cases
- Congenital deafness
 - Not considered a birth defect
 - **Solution:** Worked with Newborn Hearing Program to get data



Newborn Hearing Data

- Newborn Hearing Screening Program in same Bureau as CBDRP
- Consent form updated
 - “The Department of Public Health may also use this information for public health surveillance projects and to evaluate public health trends.”
- Data for both programs part of the Bureau’s Early Childhood Data System



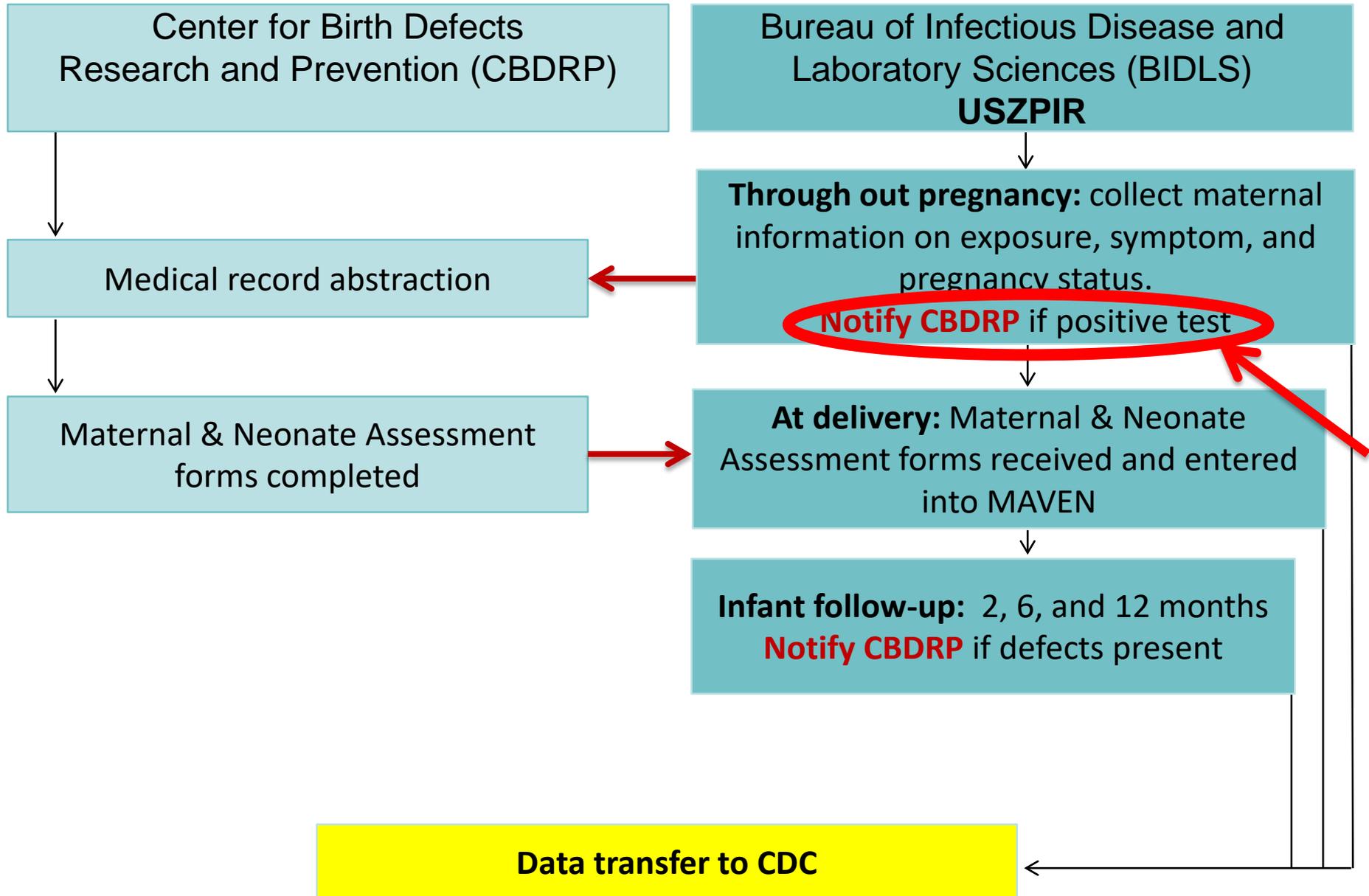
Integration of ZBDS and USZPIR

Initial engagement between ZBDS and USZPIR

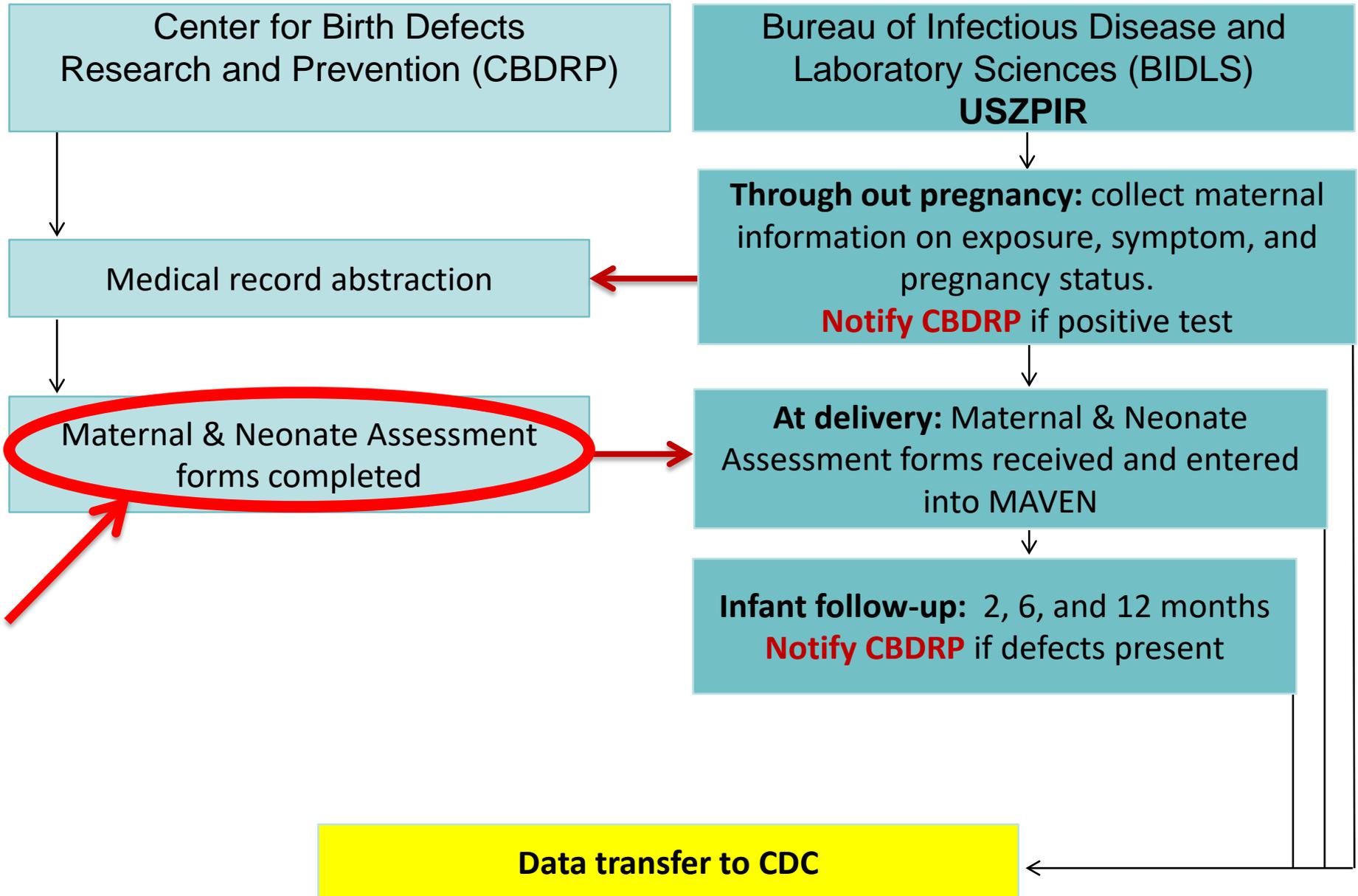
- Started early, reached out to program
- Recognition of working towards common goals and common good
 - Motivation to work through challenges
- Both programs have same legal liaison
 - Smoothed data use agreement process
- Acknowledgement that all parties bring expertise



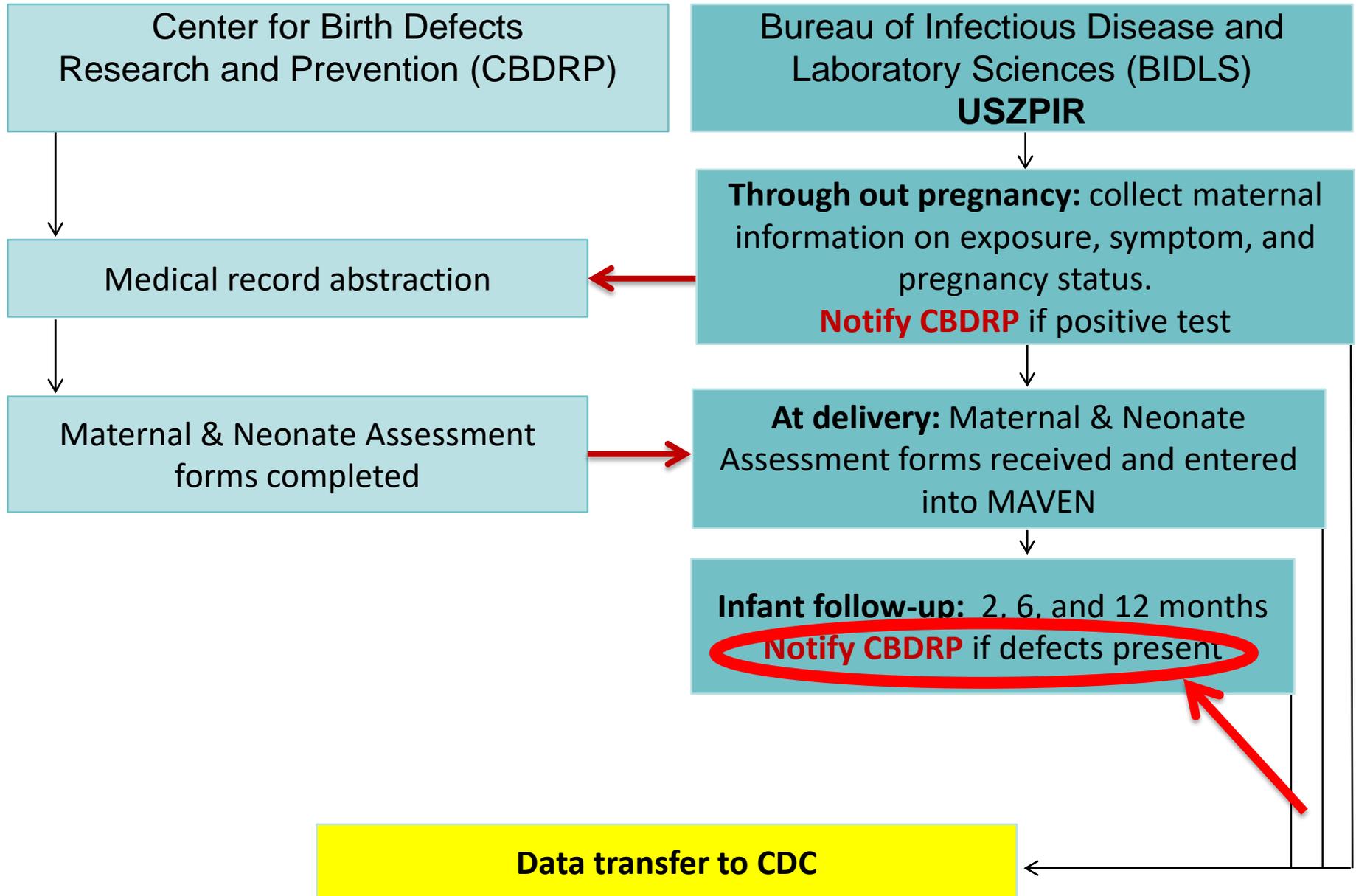
Integration of Data Flow



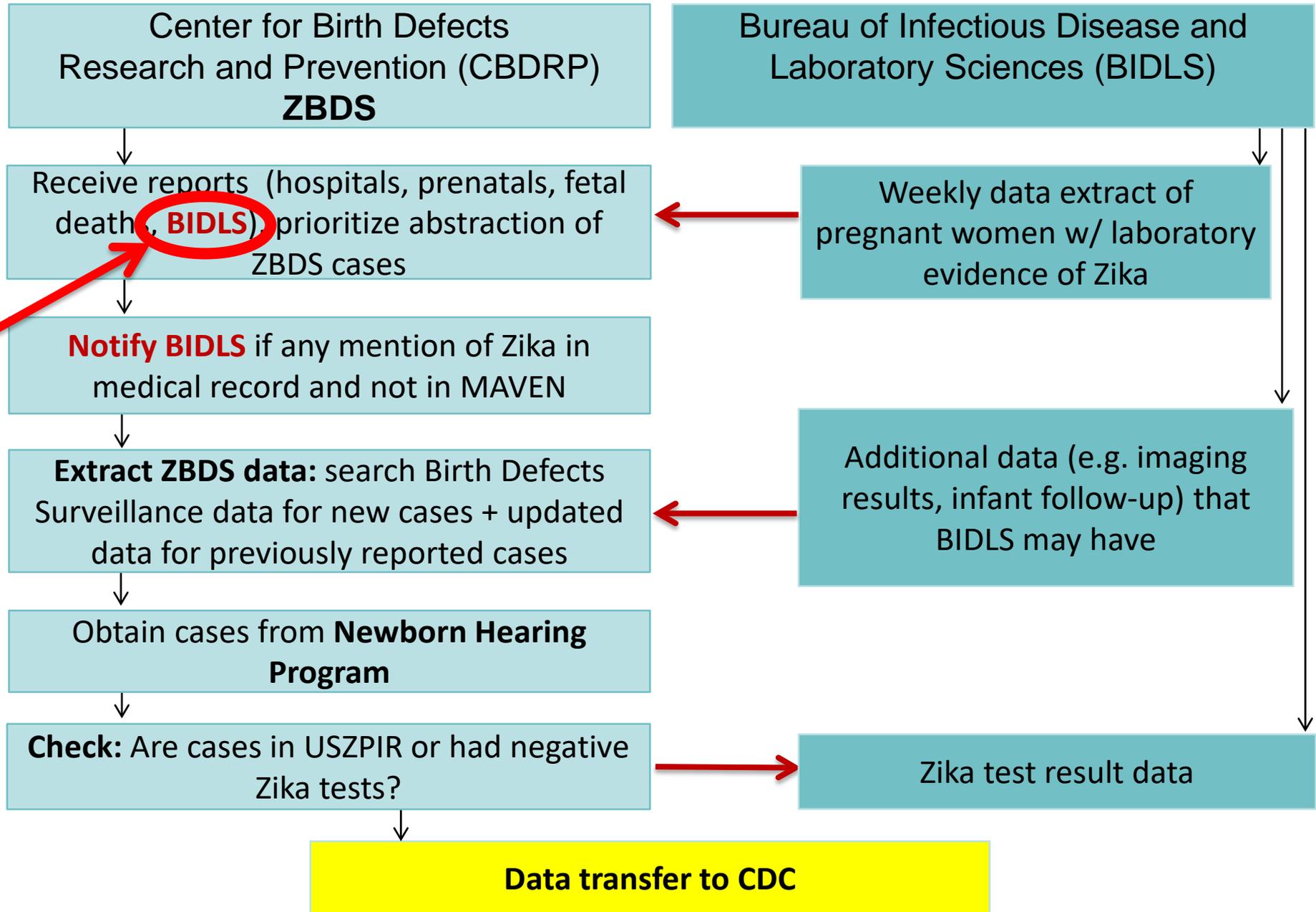
Integration of Data Flow



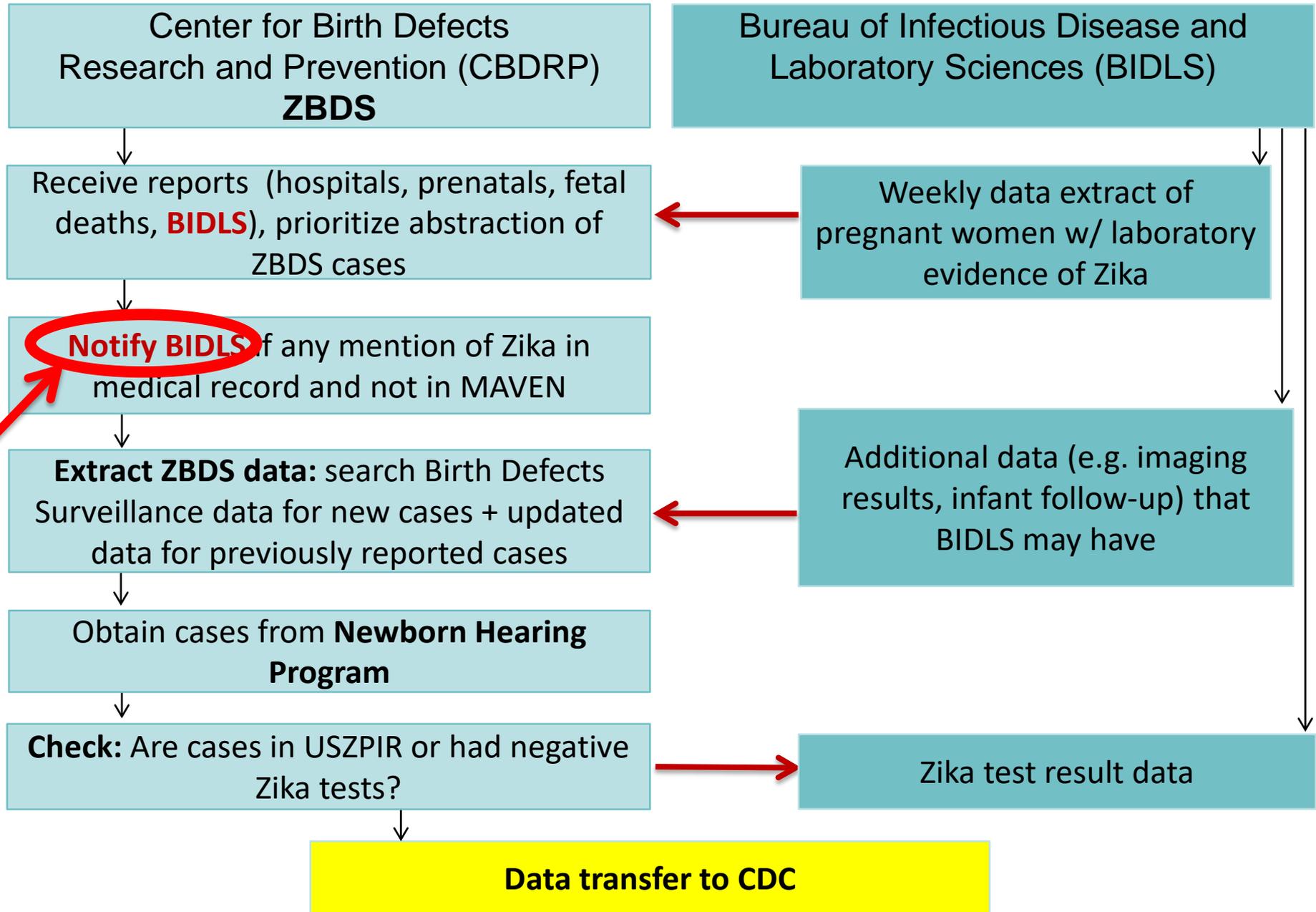
Integration of Data Flow



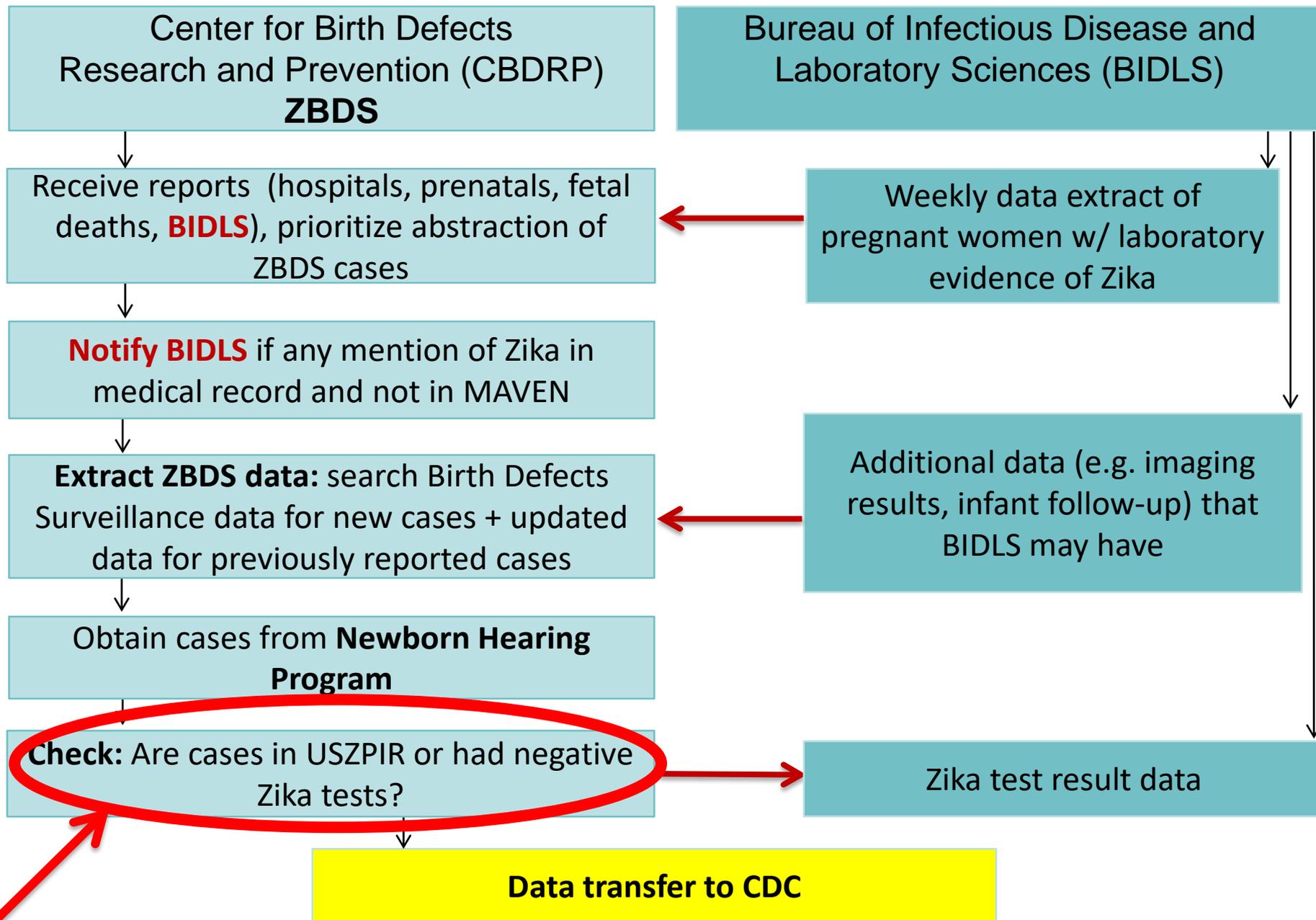
Integration of Data Flow



Integration of Data Flow



Integration of Data Flow



Integration of ZBDS and USZPIR

Logistics

- Bi-weekly meetings between CBDRP and BIDLS staff
- Data checks between CBDRP and BIDLS
 - Structured as well as informal
- CBDRP relies on expertise of BIDLS for data collection and interpretation of test results and routine communication mechanisms with providers
- BIDLS relies on expertise of CBDRP in medical record abstraction and understanding birth defects

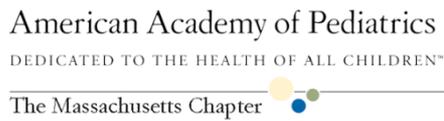
Other activities in MA

Outreach campaign (lead: BIDLS)

- Initial "Zika 101" webinar for website
 - Develop & disseminate educational materials to target populations
- CBDRP:** birth defects expertise

Zika advisory committee

- BIDLS & CBDRP identified representatives of key organizations



Other activities in MA

Webinar for providers (lead: CBDRP)

- Webinar w/ CME credits on Zika and practice guidelines.

BIDLS: assisted with connecting to providers and doing session on testing

- Overview & Laboratory Testing: <http://bit.ly/2knsYhf>
- Impact on Reproductive Planning and Pregnancy: <http://bit.ly/2BXIUPs>
- Recognizing and Diagnosing Zika-Associated Birth Defects: <http://bit.ly/2Dvgrxj>
- Beyond Microcephaly: Post-Delivery Follow up for Zika-Exposed Infants: <http://bit.ly/2zeZe7U>

Mailing to Families (lead: CBDRP)

- Information on resources available in MA to ZBDS families



Collaboration successes

- Massachusetts was the 1st state to transfer data to USZPIR, and among the first group to provide ZBDS data
- Early collaboration has resulted in a more robust response to Zika
- Connecting to other programs
 - WIC, Sexual and Reproductive Health Programs
 - Working on linking USZPIR & ZBDS to Early Intervention



...And More Successes

- Increased completeness of USZPIR data collection for reporting
 - CBDRP record abstraction helps link BIDLs to pediatricians

Collaboration Challenges

- Integrating data from two different surveillance data systems (MAVEN vs. Birth Defects Data System)
- New national reporting mechanisms for both programs



Conclusions

Our experience with ZBDS has:

- Provided a model for response to future infectious outbreaks related to birth defects
- Facilitated improvements in our surveillance system and in inter-bureau collaboration that will be of use well beyond the Zika epidemic
- Provided data to assist with evaluating potential effects of the Zika epidemic on rates of Zika-associated birth defects in Massachusetts

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... it takes a village

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