

Louisiana Arbovirus Surveillance Summary 2018

CDC Week 31

From: 01/01/2018-08/04/2018

Table of Contents

Topic:	Page Number:
Arboviral Report Summary 2018 (mosquito, avian, equine, human)	2
Comparison of Arboviral Activity for CDC week 01 to Present in 2017 and 2018	2
Arboviral Report Summary by Parish 2018 (mosquito, avian, equine, human)	3
WNV Human Clinical Picture: Aggregate Report by Disease Type, Age Group and Gender	4
WNV-NID, Fever and Asymptomatic Infections in Louisiana by Parish According to CDC Week (with EpiCurve)	5
Number of WNV Human Clinical Presentations by Year from 2002-Present (with Chart)	6
WNV-NID Cases by CDC Week for Each Year from 2002-Present	7
WNV-NID by Parish from 2002-Present (parishes highlighted in grey have cases each year)	8
Travel-Associated Arboviruses 2018	9
CDC Weeks (Week Starting-Week Ending)	10

Report Summary

Prevention - Not in my house, not in my yard, not on my skin, day and night, I'll fight the bite!

The goal of the surveillance for West Nile (WN) Infections in humans is to describe the disease burden of the West Nile infection on the human population. Only West Nile Neuroinvasive diseases (NID) including encephalitis or meningitis get reliably reported. For every NID case there are about 10 cases of Fever and about 90 completely asymptomatic infections. Only one percent of the WN-Fever (WN-F) and asymptomatic (WN-PRE) cases are reported. Although we show the number of cases of all WN infections, it is important to remember that only WN-NID cases are useful for monitoring disease burden and trends in WN in humans.

Humans: Detailed information on the number of arboviral infections can be found within this report, please refer to the Table of Contents.

Equines: Horses can be infected by WN and Eastern Equine Encephalitis (EEE) virus and do develop encephalitis. Horse's viremia is too low to infect mosquitoes and does not play a role in transmission. However, since horses live outside surveillance of horse infections is a good indicator of arboviral transmission. Contact the Louisiana Department of Agriculture and Forestry (LDAF) for the most up to date statistics on horse infections.

Sentinel Chickens: Have been used in the past as a statewide early warning system to detect arbovirus transmission. These chickens in secure cages were strategically placed and bled regularly. Serologic tests performed on the sentinel chickens provided information of current and local transmission of many arboviruses. However, experience shows that this was not very effective in providing information about local transmission.

Dead Birds: Are no longer collected statewide because testing of dead birds does not provide information on where and when the bird was infected or of local transmission. Dead birds can only indicate that the bird died at a particular location of an arbovirus endemic to Louisiana.

Mosquito Pools: This is the most effective surveillance system to monitor arboviral transmission. Arboviruses are detected through nucleic acid testing of pools of 50 or more mosquitoes of the same species. A positive mosquito pool is an indicator of recent transmission, between mosquitoes and birds, horses or humans. Every year 20,000-50,000 mosquito pools from approximately 30 parishes are submitted for testing. Detailed information on the number of positive pools can be found within this report, please refer to the Table of Contents.

Explanation of Clinical Disease: WN infections have occurred each year in Louisiana for the last 10 years. Persons of all ages are considered equally susceptible to infection. The majority of all persons infected and immuno-competent are completely asymptomatic (80-90%). A smaller proportion of persons (10-20%) present with influenza-like illness with abrupt onset of fever. A minority of people develop a serious neurologic illness such as aseptic meningitis or encephalitis (0.2% younger than 65 years old, 2% older than age 65).

Explanation of Deaths: About 10% of people who develop neuroinvasive disease can die. The reporting of deaths caused by WN-NID is not mandated by the Louisiana Sanitary code so it is inconsistently reported. It is limited to being included in this report to only those deaths occurring within two weeks for onset. For the preservation of confidentiality, OPH will not report details about WN deaths (such as date, parish, gender and age).

Limitations: Human data have very limited usefulness for mosquito control purposes. Only two percent of all WN infections are reported (because most WN infections are asymptomatic or WN fever cases do not get medical care, they never get diagnosed nor are reported). The reporting of those cases is delayed. From the time a mosquito bites a bird infected with WN viruses, it takes 1 to 2 weeks depending on temperatures and other environmental conditions for the virus to multiply in the mosquito vector (extrinsic incubation period); then it takes 3 to 14 days for the virus to multiply in the human host (intrinsic incubation period); it then takes several days from onset of disease to seeking medical care; then a few more days for a physician to order a confirmatory lab test and get the result back (one week from onset, if all goes well); then any where from a few days to a week or two to get the report to Department of Health Office of Public Health (LDH OPH). All in all, from the initial mosquito infection to the reporting of the infection it may take from 3 to 6 weeks. In summary, human data are too little too late to be of major use for mosquito control. To provide mosquito control program with data on location of human cases that may be of limited use for correlating infection rates in mosquitoes and human cases and of use to address public and media concern, general geographical location of cases and weeks of onset are provided to mosquito control who request the information. This information must remain strictly confidential. The LDH OPH Laboratory is a reference laboratory used for epidemiologic purposes. Its role in diagnosis of cases is limited since the great majority of physicians and hospitals use private laboratories for their diagnosis.

Arboviral Report Summary Presentation

Data from CDC Week 1-31 From: 01/01/2018-08/04/2018

Disease	Mosquito Pools	Avian	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD ‡	Deaths
CAL									
EEE									
SLE	9								
WEE									
WNV	655	35	2	24	6	9	39	8	2
Total	664	35	2	24	6	9	39	8	2

CAL = California serogroup viruses (including La Crosse)
 EEE = Eastern Equine Encephalitis virus
 SLE = St. Louis Encephalitis virus
 WEE = Western Equine Encephalitis virus
 WNV = West Nile virus

* Avian includes any wild bird or sentinel chicken samples

‡ PVD are people who had no symptoms at the time of donating blood with a blood collection agency, but whose blood tested positive when screened for the presence of virus. If they become symptomatic and meet the case definition reporting criteria, they are counted as a case and are included in the appropriate disease category case tallies.

Data from CDC Week 1-31 From: 01/01/2017-08/05/2017

Disease	Mosquito Pools	Avian	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD ‡	Deaths
CAL									
EEE			2						
SLE									
WEE									
WNV	297	13	0	16	3	2	21	1	2
Total	297	13	2	16	3	2	21	1	2

Arbovirus by Parish

Data from CDC Week: 31 From: 01/01/2018-08/04/2018

Parish	WNV						SLE			EEE			CAL	
	M	A	E	Human			M	A	E	Human	M	A	E	Human
				NID	F	PRE								
Acadia	1													
Allen	4													
Ascension	68			2	2	1	5							
Assumption							0							
Avoyelles				1			1							
Beauregard							0							
Bossier	11						0							
Caddo	16			1	1	3	5							
Calcasieu							0							
Claiborne				1			1							
DeSoto				1	0	1	2							
East Baton Rouge	97	1		2	0	4	6							
East Feliciana							0							
Evangeline							0							
Franklin							0							
Iberia	5						0							
Iberville							0							
Jackson							0							
Jefferson	29	27					0	6						
Jefferson Davis							0							
Lafayette	1						0	1						
Lafourche	1			1			1	1						
Lasalle							0							
Lincoln	1						0							
Livingston				1			1							
Orleans	73						0							
Ouachita	36			4	2	0	6							
Plaquemines							0							
Rapides				3	0	0	3							
St. Bernard	4						0							
St. Charles	14	7					0							
St. James	3						0							
St. John	58						0							
St. Landry			1	1			1							
St. Martin	3			1			1							
St. Mary	1						0							
St. Tammany	56		1	4	1	0	5							
Tangipahoa	32						0							
Terrebonne	3						0	1						
Washington				1			1							
West Baton Rouge	138						0							
West Feliciana							0							
Total	655	35	2	24	6	9	39	9	0	0	0	0	0	0

CAL = California serogroup viruses (including La Crosse)

EEE = Eastern Equine Encephalitis virus

SLE = St. Louis Encephalitis virus

WEE = Western Equine Encephalitis virus

WNV = West Nile virus

M = Mosquito

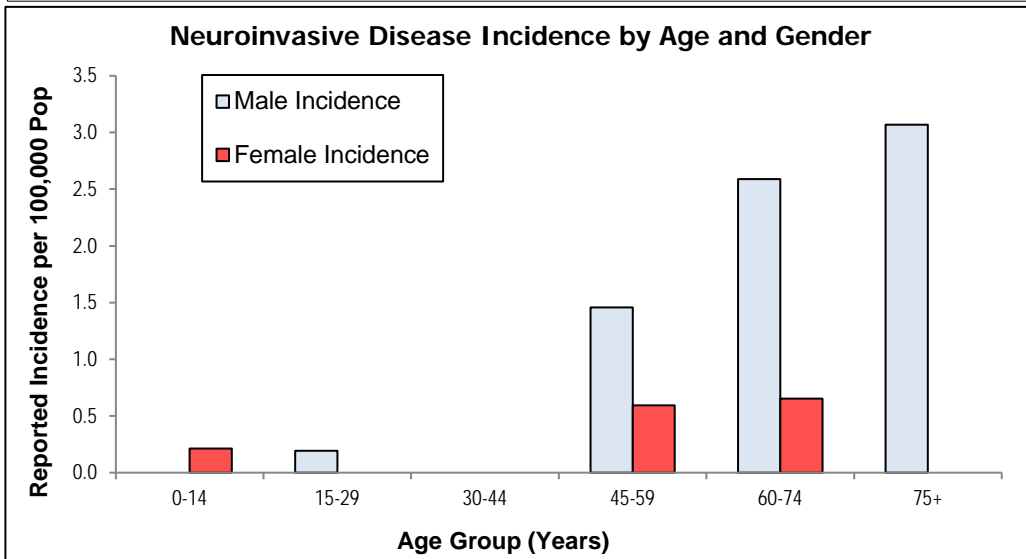
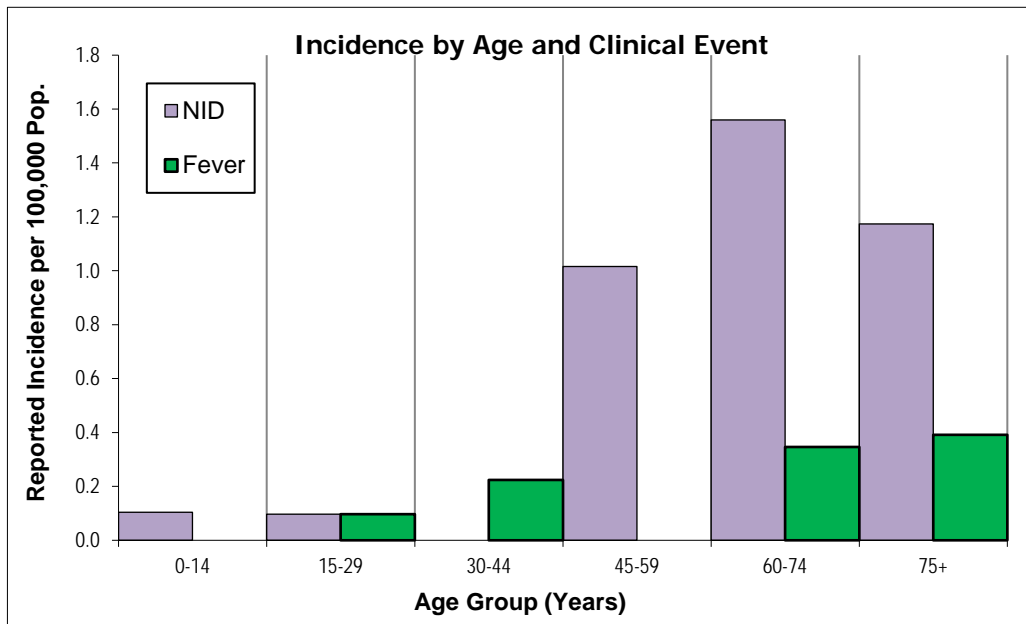
A = Avian

E = Equine

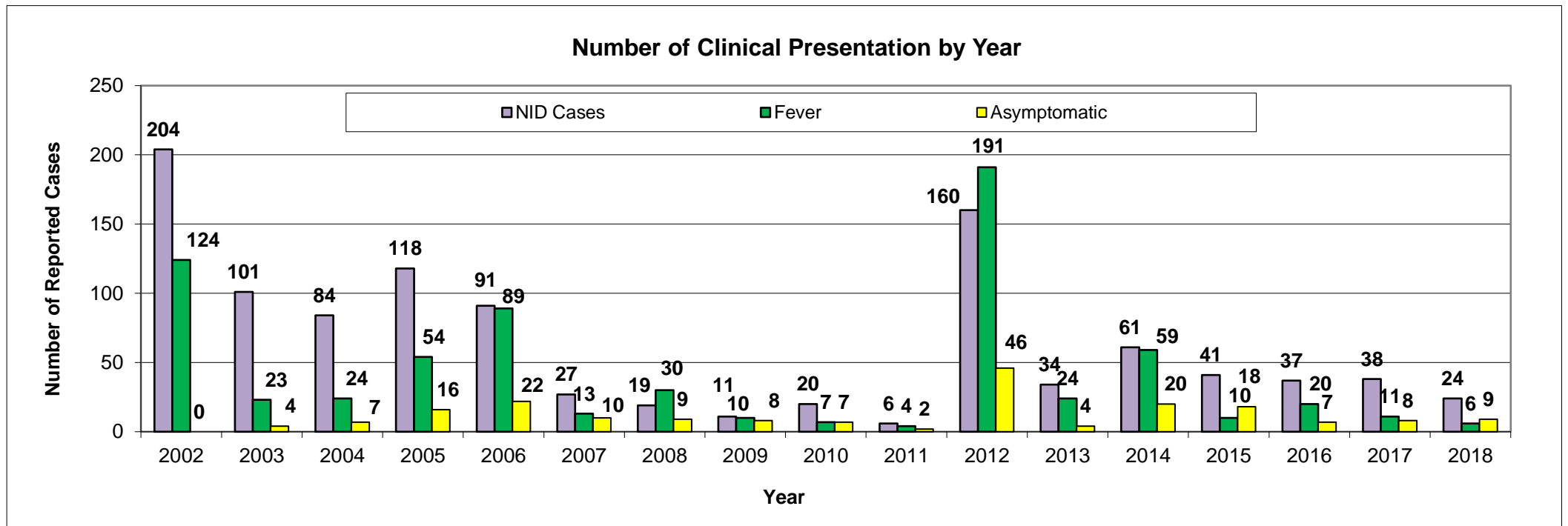
All human and equine case tallies are reported by the case's parish of residence, not the parish where the exposure occurred.

Age Group	Clinical Classification					
	NID Cases	Incidence	Fever Cases	Incidence	PRE Cases	Deaths
0-14	1	0.1	0	0.0	0	2
15-29	1	0.1	1	0.1	1	
30-44	0	0.0	2	0.2	2	
45-59	10	1.0	0	0.0	3	
60-74	9	1.6	2	0.3	3	
75+	3	1.2	1	0.4	0	
Undetermined						
Total	24	0.5	6	0.1	9	

Age Group	Neuroinvasive Disease Cases by Gender			
	Male	M Incidence	Female	F Incidence
0-14	0	0.0	1	0.2
15-29	1	0.2	0	0.0
30-44	0	0.0	0	0.0
45-59	7	1.5	3	0.6
60-74	7	2.6	2	0.7
75+	3	3.1	0	0.0
Undetermined				
Total	18	0.8	6	0.2



Total Human WNV Clinical Presentation by Year																		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
NID Cases	204	101	84	118	91	27	19	11	20	6	160	34	61	41	37	38	24	1076
Fever	124	23	24	54	89	13	30	10	7	4	191	24	59	10	20	11	6	699
Asymptomatic	0	4	7	16	22	10	9	8	7	2	46	4	20	18	7	8	9	197
Proportion of NID	0.62	0.81	0.78	0.69	0.51	0.68	0.39	0.52	0.74	0.60	0.46	0.59	0.51	0.80	0.65	0.78	0.80	
Deaths	24	7	7	11	9	2	1	0	0	0	21	4	12	5	2	4	2	
Total Disease	328	128	115	188	202	50	58	29	34	12	397	62	140	69	64	57	39	



NID by Week 2002-Present

WNV-NID Cases by CDC Week by Year																		
	Week	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Jan	1																	
	3																	
	7																	
March	10																	
	13																0	
	17																1	
May	19																0	
	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	25	2	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
July	26	11	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	2
	27	6	3	3	4	1	0	0	2	3	0	3	0	0	1	0	5	3
	28	9	5	2	5	4	0	0	0	0	1	15	1	3	2	2	0	4
	29	23	5	2	13	5	0	0	1	1	1	11	0	7	1	2	7	6
August	30	23	8	8	8	6	0	2	1	2	0	13	1	9	2	0	1	4
	31	21	10	5	21	7	1	1	0	0	0	17	3	3	5	2	1	3
	32	24	7	15	11	14	3	2	1	1	1	18	3	4	4	6	5	1
	33	21	8	7	9	13	2	1	2	1	0	16	7	9	4	0	2	0
	34	14	6	3	8	7	2	3	1	2	0	14	6	6	5	2	4	0
September	35	8	6	5	6	6	5	3	0	3	1	12	2	3	5	1	2	0
	36	13	4	5	8	9	3	2	0	1	1	4	2	8	1	1	0	0
	37	8	9	3	9	6	3	0	1	2	1	7	3	2	4	1	4	0
	38	6	4	4	2	3	1	0	0	1	0	4	0	4	0	1	1	0
	39	3	2	5	4	4	1	0	0	0	0	4	1	2	1	1	0	0
October	40	3	4	5	4	1	3	3	0	1	0	7	3	1	0	4	0	0
	41	3	2	4	3	1	0	0	0	0	0	2	1	0	0	4	0	0
	42	3	1	2	3	1	0	0	0	0	0	1	1	0	3	0	1	0
	43	0	2	0	0	0	3	0	0	0	0	3	0	0	1	2	2	0
	44	0	4	0	0	1	0	0	0	0	0	3	0	0	0	1	0	0
November	45	0	2	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0
	46	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0
	47	1	1	2	0	1	0	1	0	0	0	1	0	0	1	3	0	0
	48	0	2	1	0	0	0	0	0	0	2	0	1	0	0	2	1	0
December	49	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NID Total		204	101	84	118	91	27	19	11	20	6	160	34	61	41	37	38	24

Reg	Parish	NID 2018		Previously Reported NID Cases															
		Incid	#	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
1	Jefferson	0.0		24	3	1	6	8	2	2	0	0	0	13	0	0	1	0	0
1	Orleans	0.0		10	2	1	6	12	2	2	0	0	0	11	0	0	1	0	0
1	Plaquemines	0.0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	St Bernard	0.0		0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
2	Ascension	2.6	2	6	2	1	3	10	0	0	0	2	0	3	0	4	2	0	0
2	East Baton Rouge	0.5	2	37	1	22	17	6	0	0	2	9	0	17	0	21	3	4	6
2	East Feliciana	0.0		2	1	1	0	0	0	0	0	0	0	2	0	0	0	2	0
2	Iberville	0.0		2	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0
2	Pointe Coupee	0.0		6	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
2	West Baton Rouge	0.0		2	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0
2	West Feliciana	0.0		0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
3	Assumption	0.0		0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1
3	Lafourche	1.1	1	0	2	0	1	1	0	0	0	0	0	1	0	4	1	0	0
3	St Charles	0.0		0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
3	St James	0.0		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	St John	0.0		2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
3	St Mary	0.0		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Terrebonne	0.0		0	3	0	0	0	0	0	0	0	0	1	0	1	0	0	0
4	Acadia	0.0		0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
4	Evangeline	0.0		1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0
4	Iberia	0.0		2	1	0	4	0	0	0	0	3	0	1	0	0	0	0	1
4	Lafayette	0.0		4	0	1	1	1	1	0	0	0	0	2	9	0	0	1	0
4	St Landry	1.1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0
4	St Martin	2.1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
4	Vermillion	0.0		0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0
5	Allen	0.0		0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1
5	Beauregard	0.0		0	0	1	1	0	1	0	0	1	0	1	0	0	0	1	0
5	Calcasieu	0.0		8	1	3	2	5	0	1	0	0	2	8	1	0	0	5	0
5	Cameron	0.0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Jefferson Davis	0.0		0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0

Reg	Parish	NID 2018		Previously Reported NID Cases															
		Incid	#	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
6	Avoyelles	2.4	1	2	0	0	0	1	1	1	0	0	0	1	0	0	1	0	0
6	Catahoula	0.0		0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	Concordia	0.0		1	0	0	0	1	1	0	0	0	0	2	0	0	0	0	1
6	Grant	0.0		1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1
6	Rapides	2.4	3	14	2	8	7	7	2	0	1	0	0	11	4	0	8	2	7
6	Lasalle	0.0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6	Vernon	0.0		0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0
6	Winn	0.0		1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
7	Bienville	0.0		0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
7	Bossier	0.0		3	8	9	6	2	0	0	0	0	0	6	0	2	1	1	2
7	Caddo	0.4	1	5	38	8	16	3	7	3	1	0	0	19	0	16	5	10	6
7	Claiborne	5.9	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	DeSoto	3.9	1	1	1	0	0	0	0	0	0	0	0	3	0	0	0	1	0
7	Natchitoches	0.0		0	1	0	2	0	0	0	0	0	0	2	0	1	0	0	0
7	Red River	0.0		1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7	Sabine	0.0		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7	Webster	0.0		0	0	1	0	1	0	0	0	0	0	4	0	0	1	0	0
8	Caldwell	0.0		0	0	1	0	0	0	0	0	0	0	1	3	0	0	0	0
8	East Carroll	0.0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Franklin	0.0		0	0	1	1	0	0	0	0	0	0	1	0	1	0	1	0
8	Jackson	0.0		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Lincoln	0.0		0	2	0	1	0	0	1	0	0	0	1	0	0	0	0	2
8	Madison	0.0		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
8	Morehouse	0.0		0	2	2	1	0	1	0	0	0	0	1	0	0	0	0	2
8	Ouachita	2.7	4	6	2	5	15	3	1	1	0	0	0	3	14	2	6	3	1
8	Richland	0.0		2	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
8	Tensas	0.0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Union	0.0		1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
8	West Carroll	0.0		0	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0
9	Livingston	1.1	1	12	5	6	11	1	1	1	0	1	0	6	1	2	0	2	3
9	St Helena	0.0		0	2	0	2	0	0	0	0	0	0	2	0	0	0	0	0
9	St Tammany	2.1	4	27	4	0	3	14	0	3	4	1	1	10	1	2	2	0	2
9	Tangipahoa	0.0		12	6	1	2	6	1	3	1	0	1	12	0	0	1	0	0
9	Washington	2.3	1	6	2	0	3	4	2	0	1	0	1	1	0	1	0	0	1
Total		0.8	24	204	101	84	118	91	27	19	11	20	6	160	34	61	41	37	38

* parishes highlighted in grey have cases each year

Imported Arboviral Summary 2018

Parish	CHIKV	DENV	ZIKV ¹	Total
Caddo		1		1
St. Tammany		1		1
Statewide Total	0	2	0	2

Countries of Travel ²		
CHIKV	DENV	ZIKV ¹
	Guatemala	
	Sri Lanka	

Imported Arboviral Summary 2017

Parish	CHIKV	DENV	ZIKV ¹	Total
Jefferson	3		1	4
St. Tammany		1		1
Statewide Total	3	1	1	5

Countries of Travel		
CHIKV	DENV	ZIKV ¹
India	India	USVI

Imported Arboviral Summary 2016

Parish	CHIKV	DENV	ZIKV ¹	Total
Ascension			1	1
Bienville			1	1
Bossier	1			1
Caddo		1	1	2
East Baton Rouge			2	2
Jefferson		1	5	6
Lafayette		1	1	2
Livingston			2	2
Orleans		2	16	18
Ouachita			1	1
St. Charles			1	1
St. James			1	1
St. Landry			4	4
St. Tammany		1	2	3
Statewide Total	1	6	38	45

Countries of Travel		
CHIKV	DENV	ZIKV ¹
Costa Rica	Bolivia	Belize
	Guatemala	Colombia
	Indonesia	Costa Rica
	Mexico	Dominican Republic
	Nigeria	El Salvador
	Philippines	Grenada
		Guatemala
		Haiti
		Honduras
		Jamaica
		Mexico
		Nicaragua
		Puerto Rico
		Saint Lucia
		Trinidad
		USVI
		Venezuela

¹Zika disease cases that had complaints of fever, rash, arthralgia, conjunctivitis, GBS or a birth defect

²For a comprehensive list of countries with active transmission of a specific arbovirus, please visit <https://wwwnc.cdc.gov/travel/>

CDC Week	Week Starting	Week Ending
01	12/31/2017	1/6/2018
02	1/7/2018	1/13/2018
03	1/14/2018	1/20/2018
04	1/21/2018	1/27/2018
05	1/28/2018	2/3/2018
06	2/4/2018	2/10/2018
07	2/11/2018	2/17/2018
08	2/18/2018	2/24/2018
09	2/25/2018	3/3/2018
10	3/4/2018	3/10/2018
11	3/11/2018	3/17/2018
12	3/18/2018	3/24/2018
13	3/25/2018	3/31/2018
14	4/1/2018	4/7/2018
15	4/8/2018	4/14/2018
16	4/15/2018	4/21/2018
17	4/22/2018	4/28/2018
18	4/29/2018	5/5/2018
19	5/6/2018	5/12/2018
20	5/13/2018	5/19/2018
21	5/20/2018	5/26/2018
22	5/27/2018	6/2/2018
23	6/3/2018	6/9/2018
24	6/10/2018	6/16/2018
25	6/17/2018	6/23/2018
26	6/24/2018	6/30/2018
27	7/1/2018	7/7/2018
28	7/8/2018	7/14/2018
29	7/15/2018	7/21/2018
30	7/22/2018	7/28/2018
31	7/29/2018	8/4/2018
32	8/5/2018	8/11/2018
33	8/12/2018	8/18/2018
34	8/19/2018	8/25/2018
35	8/26/2018	9/1/2018
36	9/2/2018	9/8/2018
37	9/9/2018	9/15/2018
38	9/16/2018	9/22/2018
39	9/23/2018	9/29/2018
40	9/30/2018	10/6/2018
41	10/7/2018	10/13/2018
42	10/14/2018	10/20/2018
43	10/21/2018	10/27/2018
44	10/28/2018	11/3/2018
45	11/4/2018	11/10/2018
46	11/11/2018	11/17/2018
47	11/18/2018	11/24/2018
48	11/25/2018	12/1/2018
49	12/2/2018	12/8/2018
50	12/9/2018	12/15/2018
51	12/16/2018	12/22/2018
52	12/23/2018	12/29/2018