

Louisiana Arbovirus Surveillance Summary 2020

CDC Week 49

From: 01/01/2020-12/05/2020

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Table of Contents

Topic:	Page Number:
Arboviral Report Summary 2020 (mosquito, avian, equine, human)	2
Comparison of Arboviral Activity for CDC week 01 to Present in 2019 and 2020	2
Arboviral Report Summary by Parish 2020 (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 2020	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 1-49 From: 01/01/2020-12/05/2020

Disease	Mosquito Pools	Avian	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD ‡	Deaths
CAL									
EEE	1		6						
SLE									
WEE									
WNV	458	5	5	14	4	5	23	5	3
Total	459	5	11	14	4	5	23	5	3

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 1-49 From: 01/01/2019-12/07/2019

Disease	Mosquito Pools	Avian	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD ‡	Deaths
CAL									
EEE	8	1	30						
SLE	9	0	0						
WEE									
WNV	201	11	2	11	8	2	21	3	2
Total	218	12	32	11	8	2	21	3	2

Arbovirus by Parish

Data from CDC Week: 49 From: 01/01/2020-12/05/2020

Parish	WNV							SLE				EEE				CAL
	M	A	E	Human				M	A	E	Human	M	A	E	Human	Human
				NID	F	PRE	Total									
Acadia	1						0									
Allen	13						0									
Ascension	25						0									
Assumption	2						0									
Avoyelles							0									
Beauregard							0									
Bossier	7			3			3									
Caddo	27			6			6									
Calcasieu	14						0									
Cameron							0									
Claiborne							0									
DeSoto							0									
East Baton Rouge	26	3		1	1	2	4									
East Feliciana							0									
Evangeline							0									
Franklin							0									
Grant							0									
Iberia	2						0									
Iberville							0						1			
Jackson							0									
Jefferson	4	2		1			1									
Jefferson Davis	1						0									
Lafayette							0						1			
Lafourche	4						0						3			
Lasalle							0									
Lincoln	1						0									
Livingston					1		1									
Madison				1			1									
Natchitoches							0									
Orleans	9						0									
Ouachita	172						0									
Pointe Coupee							0									
Rapides					1		1									
Red River							0									
St. Bernard	3						0									
St. Charles	2						0									
St. James	2						0									
St. John	4						0									
St. Landry							0									
St. Martin	3						0				1		1			
St. Mary	1						0									
St. Tammany	7		2			1	1									
Tangipahoa	33		1	2		1	3									
Terrebonne	15						0									
Vermilion			1				0									
Webster					1		1									
West Baton Rouge	80						0									
West Carroll						1	1									
Winn			1				0									
Total	458	5	5	14	4	5	23	0	0	0	0	1	0	6	0	0

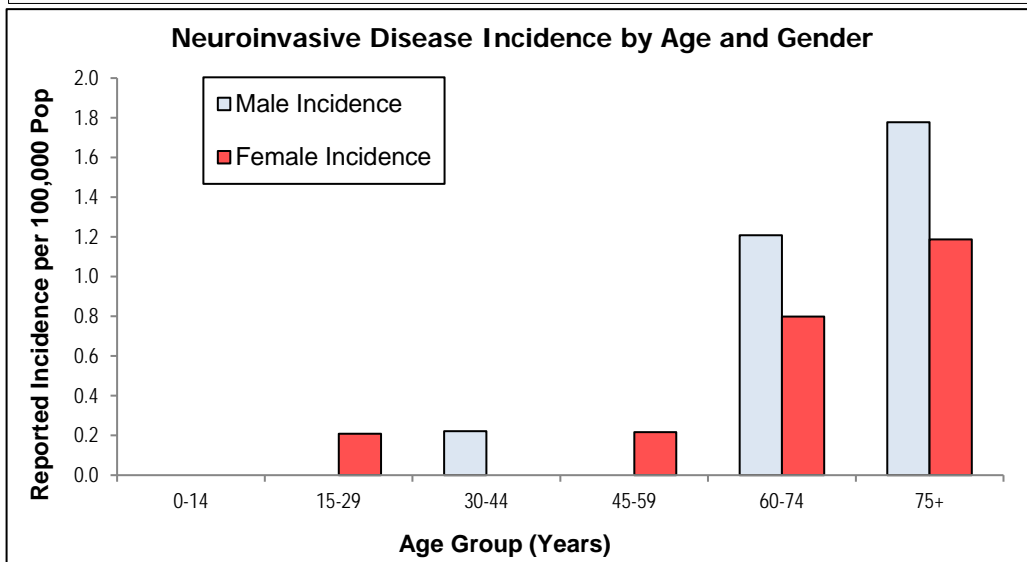
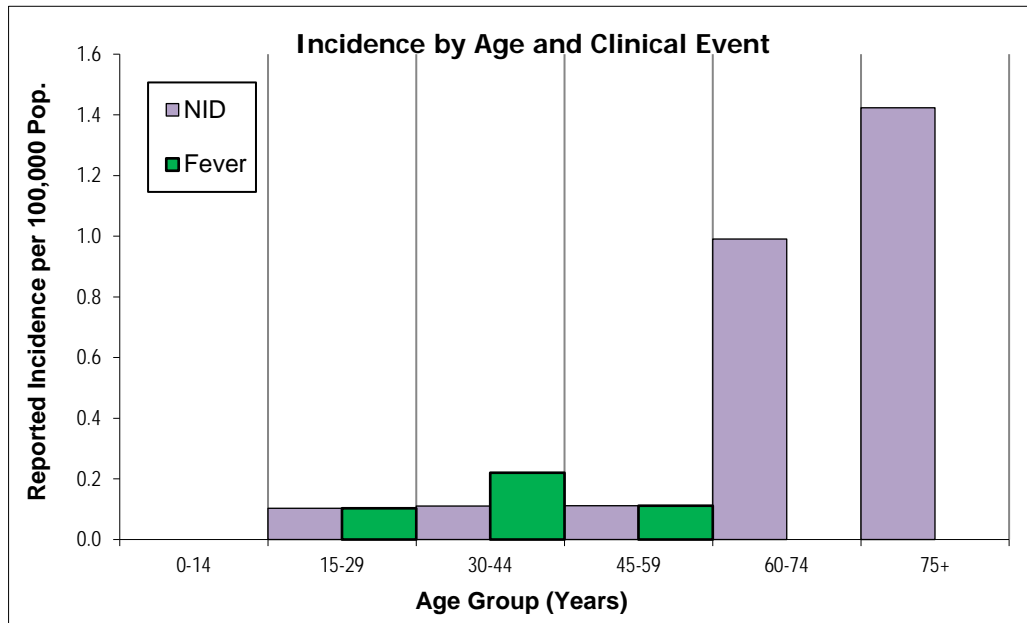
CAL = California serogroup viruses (including La Crosse)
 EEE = Eastern Equine Encephalitis virus
 SLE = St. Louis Encephalitis virus
 WEE = Western Equine Encephalitis virus
 WNV = West Nile virus

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.

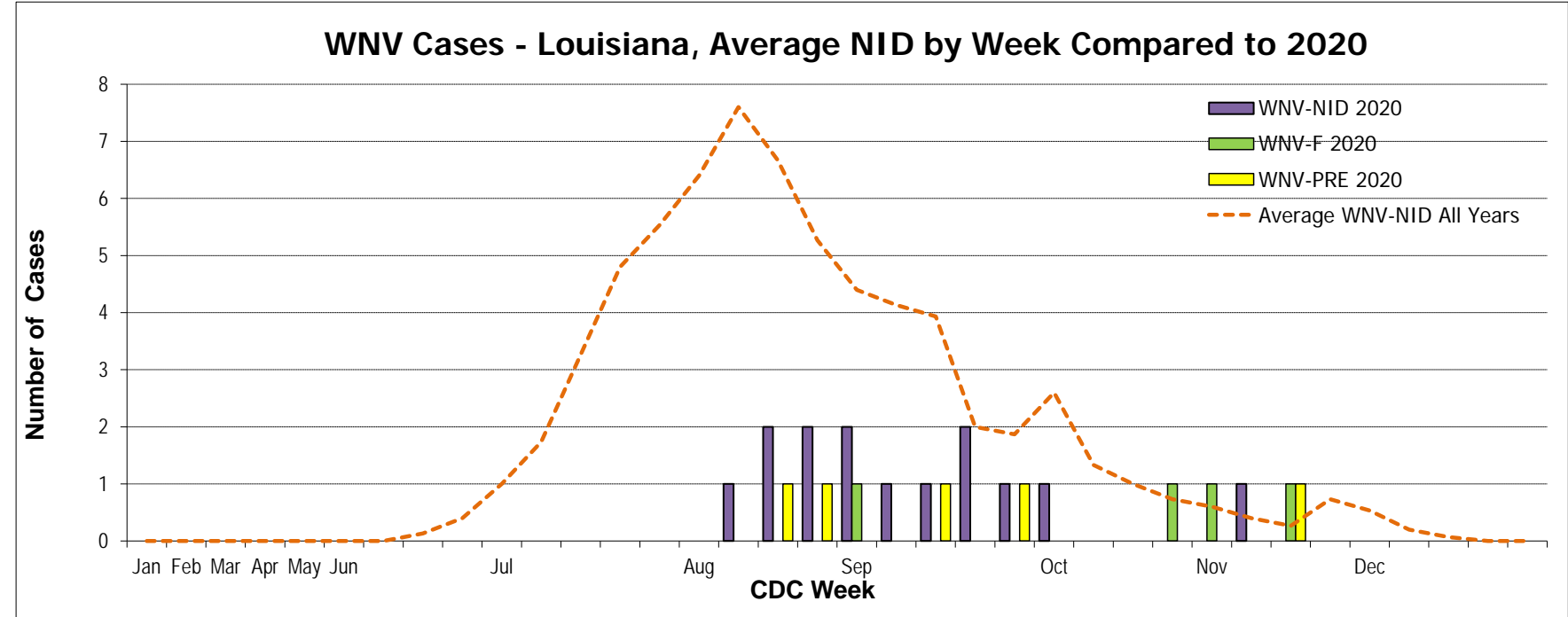
Age Group	Clinical Classification					
	NID Cases	Incidence	Fever Cases	Incidence	PRE Cases	Deaths
0-14	0	0.0	0	0.0	0	0
15-29	1	0.1	1	0.1	0	0
30-44	1	0.1	2	0.2	2	0
45-59	1	0.1	1	0.1	1	0
60-74	7	1.0	0	0.0	2	0
75+	4	1.4	0	0.0	0	3
Undetermined						
Total	14	0.3	4	0.1	5	3

Age Group	Neuroinvasive Disease Cases by Gender			
	Male	M Incidence	Female	F Incidence
0-14	0	0.0	0	0.0
15-29	0	0.0	1	0.2
30-44	1	0.2	0	0.0
45-59	0	0.0	1	0.2
60-74	4	1.2	3	0.8
75+	2	1.8	2	1.2
Undetermined				
Total	7	0.3	7	0.3

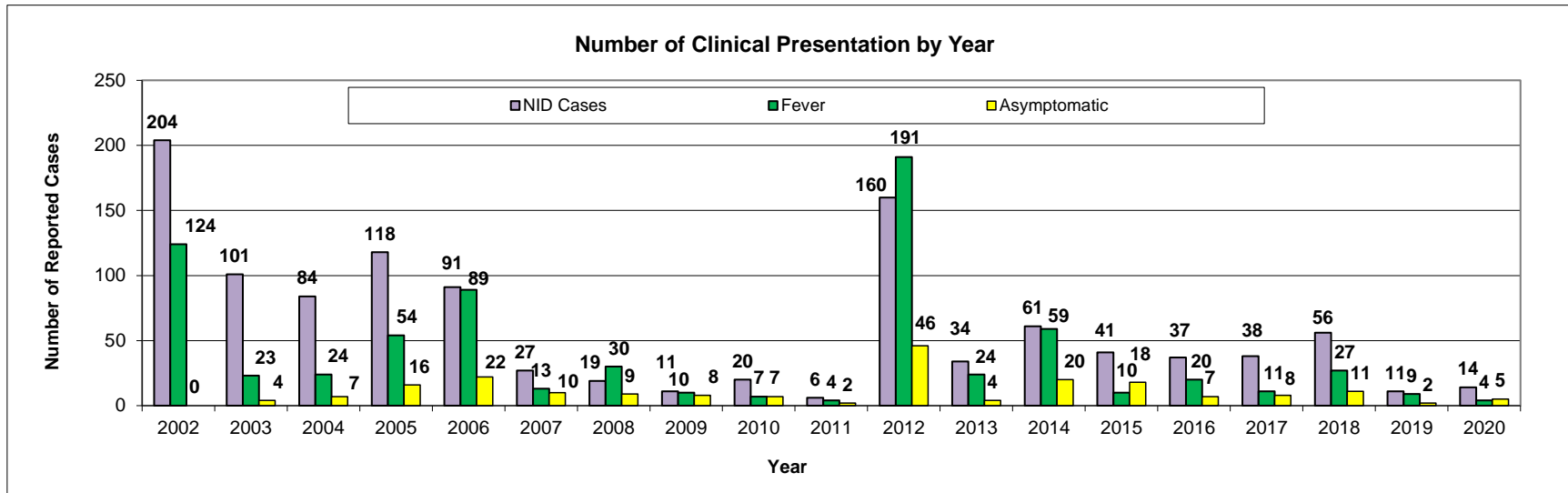


WNV Infections by Parish According to CDC Week

Region	Parish	Total	CDC Week																																																												
			1-4	5-8	9-12	13-17	18-21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52																									
			Jan	Feb	Mar	Apr	May	Jun	Jul								Aug				Sep				Oct				Nov				Dec																														
1	Jefferson	1																							1																																						
2	East Baton Rouge	1																																																													
3		0																																																													
4		0																																																													
5		0																																																													
6		0																																																													
7	Bossier	3																							1																																						
	Caddo	6																							1	1	1																																				
8	Madison	1																																																													
9	Tangipahoa	2																								1																																					
	WNV-NID 2020	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2																																				
	WNV-F 2020	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	WNV-PRE 2020	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1																																			
	Average WNV-NID All Years	68	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	5	6	6	8	7	5	4	4	4	4	2	2	3	1	1	1	1	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				



Total Human WNV Clinical Presentation by Year ¹																				
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
NID Cases	204	101	84	118	91	27	19	11	20	6	160	34	61	41	37	38	56	11	14	1133
Fever	124	23	24	54	89	13	30	10	7	4	191	24	59	10	20	11	27	9	4	733
Asymptomatic	0	4	7	16	22	10	9	8	7	2	46	4	20	18	7	8	11	2	5	206
Proportion of NID Deaths	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	0.67	0.55	0.78	
Total Disease	328	128	115	188	202	50	58	29	34	12	397	62	140	69	64	57	94	22	23	



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	2019	2020
Jan	1																			
	3																			
	7																			
March	10																			
	13																			
	17																0			
May	19																1			
	20	0	0	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	0	0
June	22	0	0	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	0	0
	24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	25	2	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0
July	26	11	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	2	0	0
	27	6	3	3	4	1	0	0	2	3	0	3	0	0	1	0	5	3	0	0
	28	9	5	2	5	4	0	0	0	0	1	15	1	3	2	2	0	4	1	0
	29	23	5	2	13	5	0	0	1	1	1	11	0	7	1	2	7	9	1	0
August	30	23	8	8	8	6	0	2	1	2	0	13	1	9	2	0	1	3	4	0
	31	21	10	5	21	7	1	1	0	0	0	17	3	3	5	2	1	8	0	0
	32	24	7	15	11	14	3	2	1	1	1	18	3	4	4	6	5	2	1	1
	33	21	8	7	9	13	2	1	2	1	0	16	7	9	4	0	2	1	0	2
	34	14	6	3	8	7	2	3	1	2	0	14	6	6	5	2	4	4	0	2
September	35	8	6	5	6	6	5	3	0	3	1	12	2	3	5	1	2	2	0	2
	36	13	4	5	8	9	3	2	0	1	1	4	2	8	1	1	0	5	0	1
	37	8	9	3	9	6	3	0	1	2	1	7	3	2	4	1	4	2	1	1
	38	6	4	4	2	3	1	0	0	1	0	4	0	4	0	1	1	3	1	2
	39	3	2	5	4	4	1	0	0	0	0	4	1	2	1	1	0	1	1	1
October	40	3	4	5	4	1	3	3	0	1	0	7	3	1	0	4	0	1	0	1
	41	3	2	4	3	1	0	0	0	0	0	2	1	0	0	4	0	1	1	0
	42	3	1	2	3	1	0	0	0	0	0	1	1	0	3	0	1	1	0	0
	43	0	2	0	0	0	3	0	0	0	0	3	0	0	1	2	2	2	0	0
	44	0	4	0	0	1	0	0	0	0	0	3	0	0	0	1	0	0	0	0
November	45	0	2	2	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	1
	46	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	
	47	1	1	2	0	1	0	1	0	0	0	1	0	0	1	3	0	0	0	
	48	0	2	1	0	0	0	0	0	0	2	0	1	0	0	0	2	1	0	0
December	49	0	3	0	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	0	
	51	0	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	0	
NID Total		204	101	84	118	91	27	19	11	20	6	160	34	61	41	37	38	56	11	14

Imported Arboviral Summary 2020

Parish	CHIKV	DENV	ZIKV ¹	Total	ZIKV Other ²
Evangeline		1		1	
Orleans		1		1	
Bossier		1		1	
Statewide Total	0	3	0	3	0

Countries/Territories of Travel ²		
CHIKV	DENV	ZIKV ¹
	Philippines	
	Puerto Rico	
	Jamaica	

Imported Arboviral Summary 2019

Parish	CHIKV	DENV	ZIKV ¹	Total	ZIKV Other ²
Caddo				0	1
East Baton Rouge		1			
Jefferson		2		2	
Lafayette		2		2	
Orleans		2		2	
Statewide Total	0	7	0	7	1

Countries/Territories of Travel ²		
CHIKV	DENV	ZIKV ¹
	Cuba	Puerto Rico
	Guatemala	
	Honduras	
	Nicaragua	

Imported Arboviral Summary 2018

Parish	CHIKV	DENV	ZIKV ¹	Total
Caddo		1		1
Orleans	1			1
St. Tammany		1		1
Statewide Total	1	2	0	3

Countries/Territories of Travel ²		
CHIKV	DENV	ZIKV ¹
Tanzania	Guatemala	
	Sri Lanka	

Imported Arboviral Summary 2017

Parish	CHIKV	DENV	ZIKV ¹	Total	ZIKV Other ²
Jefferson	3		1	4	1
Orleans			0		1
St. Tammany		1	0	1	
Statewide Total	3	1	1	5	2

Countries/Territories of Travel ²		
CHIKV	DENV	ZIKV ¹
India	India	USVI

Imported Arboviral Summary 2016

Parish	CHIKV	DENV	ZIKV ¹	Total	ZIKV Other ²
Ascension			1	1	
Beauregard			0	0	1
Bienville			1	1	
Bossier	1		0	1	
Caddo		1	1	2	1
East Baton Rouge			2	2	2
Jefferson		1	5	6	1
Lafayette		1	1	2	
Livingston			2	2	
Orleans		2	16	18	2
Ouachita			1	1	
St. Charles			1	1	
St. James			1	1	
St. Landry			4	4	
St. Tammany		1	2	3	2
Statewide Total	1	6	38	45	9
Out of Country	0	0	2		

Countries/Territories of Travel ²		
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 had complaints of fever, rash, arthralgia, conjunctivitis, GBS or a birth defect

²Zika or flavivirus infections were asymptomatic but had laboratory evidence

³For 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	12/29/2019	1/4/2020
02	1/5/2020	1/11/2020
03	1/12/2020	1/18/2020
04	1/19/2020	1/25/2020
05	1/26/2020	2/1/2020
06	2/2/2020	2/8/2020
07	2/9/2020	2/15/2020
08	2/16/2020	2/22/2020
09	2/23/2020	2/29/2020
10	3/1/2020	3/7/2020
11	3/8/2020	3/14/2020
12	3/15/2020	3/21/2020
13	3/22/2020	3/28/2020
14	3/29/2020	4/4/2020
15	4/5/2020	4/11/2020
16	4/12/2020	4/18/2020
17	4/19/2020	4/25/2020
18	4/26/2020	5/2/2020
19	5/3/2020	5/9/2020
20	5/10/2020	5/16/2020
21	5/17/2020	5/23/2020
22	5/24/2020	5/30/2020
23	5/31/2020	6/6/2020
24	6/7/2020	6/13/2020
25	6/14/2020	6/20/2020
26	6/21/2020	6/27/2020
27	6/28/2020	7/4/2020
28	7/5/2020	7/11/2020
29	7/12/2020	7/18/2020
30	7/19/2020	7/25/2020
31	7/26/2020	8/1/2020
32	8/2/2020	8/8/2020
33	8/9/2020	8/15/2020
34	8/16/2020	8/22/2020
35	8/23/2020	8/29/2020
36	8/30/2020	9/5/2020
37	9/6/2020	9/12/2020
38	9/13/2020	9/19/2020
39	9/20/2020	9/26/2020
40	9/27/2020	10/3/2020
41	10/4/2020	10/10/2020
42	10/11/2020	10/17/2020
43	10/18/2020	10/24/2020
44	10/25/2020	10/31/2020
45	11/1/2020	11/7/2020
46	11/8/2020	11/14/2020
47	11/15/2020	11/21/2020
48	11/22/2020	11/28/2020
49	11/29/2020	12/5/2020
50	12/6/2020	12/12/2020
51	12/13/2020	12/19/2020
52	12/20/2020	12/26/2020
53	12/27/2020	1/2/2021