Louisiana Arbovirus Surveillance Summary 2013

CDC Week 36 From: 01/01/2013-09/07/2013

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Report Summary

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 and Hospitals Office of Public Health (DHH 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 DHH 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 36 From: 01/01/2013-09/07/2013

Disease	Mosquito Pools	Avian	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD	Deaths
CAL							0		
EEE			6				0		
SLE		3					0		
WEE							0		
WNV	166	59	2	18	13	3	34	4	1
Total	166	62	8	18	13	3	34	4	1

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

Data from CDC Week 36 From: 01/01/2012-09/08/2012

Disease	Mosquito Pools	Avian	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD	Deaths
CAL							0		
EEE	1		33				0		
SLE	0						0		
WEE							0		
WNV	2323	123	28	88	59	29	176	27	10
Total	2324	123	61	88	59	29	176	27	10

Arbovirus by Parish

Data from CDC Week: 36 From: 01/01/2013-09/07/2013

Parish	WNV							SLE				EEE				CAL
	M	A	E	Human				M	A	E	Human	M	A	E	Human	Human
				NID	F	PRE	Total									
Acadia		2					0									
Allen	19						0									
Ascension					1		1							1		
Caddo	1						0									
Calcasieu	1			1	1		2									
Caldwell			1	2			2									
East Baton Rouge	2						0									
Evangeline							0							1		
Iberia	9						0									
Jefferson	1	4					0		1					1		
Jefferson Davis	1						0									
Lafayette	7	39		2	4		6									
Lincoln	1						0									
Livingston			1	1			1							1		
Orleans	1						0									
Ouachita	76			9	4	1	14									
Rapides				2			2									
Sabine							0							1		
St. Charles		4					0									
St. Mary		5					0		2							
St. Martin	12	3			1		1									
St.Tammany	26			1	2	1	4							1		
Tangipahoa	3						0									
Terrebonne	1	2					0									
Vernon						1	1									
West Baton Rouge	5						0									
Total	166	59	2	18	13	3	34	0	3	0	0	0	0	6	0	0

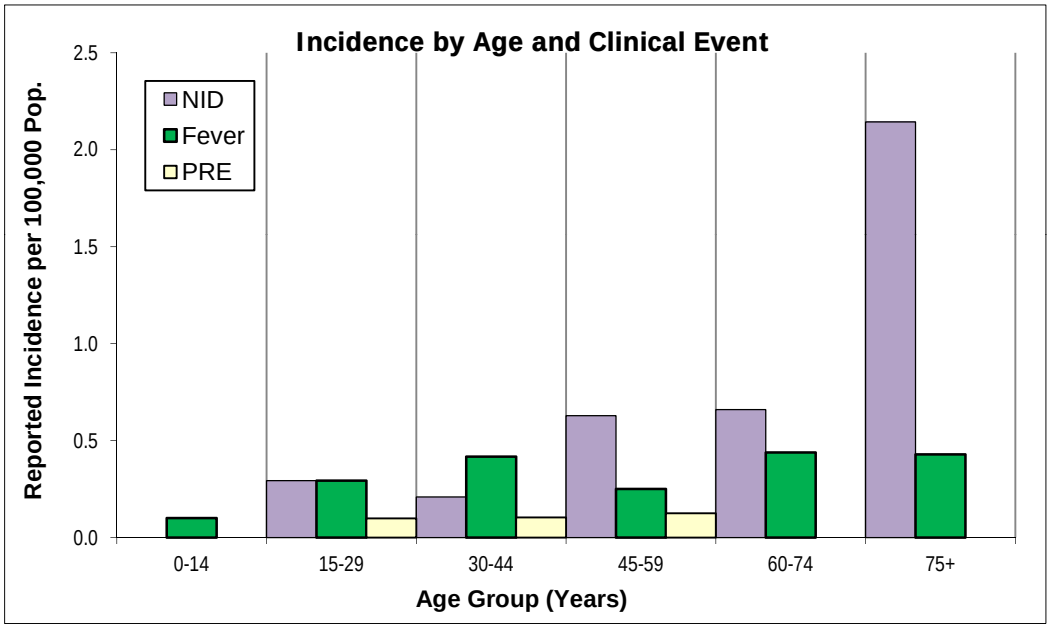
M = Mosquito
A = Avian
E = Equine

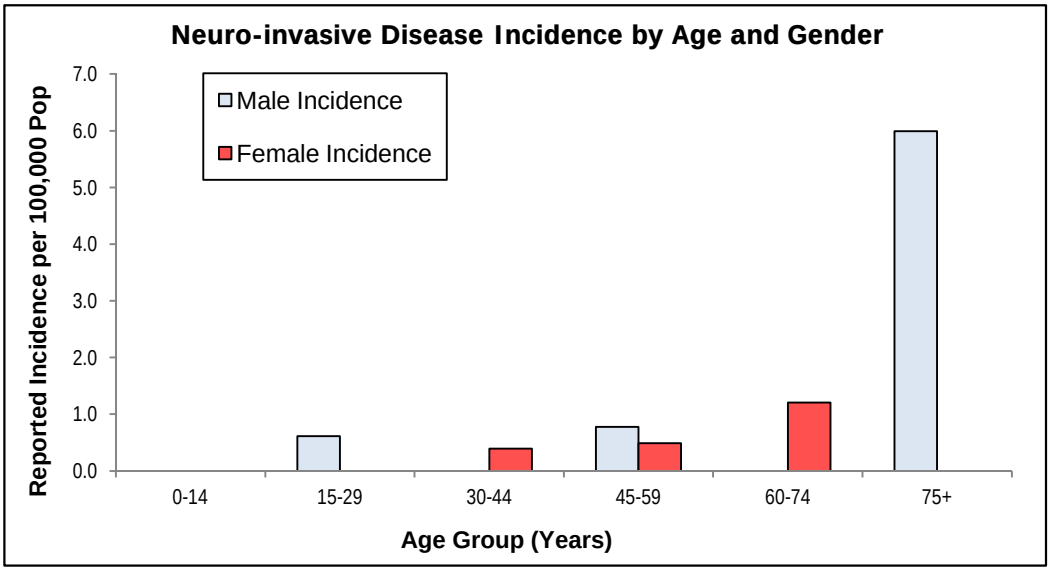
CAL = California serogroup viruses (including La Crosse)
EEE = Eastern Equine Encephalitis virus
SLE = St. Louis Encephalitis virus
WEE = Western Equine Encephalitis virus
WNV = West Nile virus

WNV Human Clinical Presentation

Age Group	Clinical Classification					
	NID Cases	Incidence	Fever Cases	Incidence	PRE Cases	Deaths
0-14	0	0.0	1	0.1		
15-29	3	0.3	3	0.3	1	
30-44	2	0.2	4	0.4	1	
45-59	5	0.6	2	0.3	1	0
60-74	3	0.7	2	0.4		0
75+	5	2.1	1	0.4		1
Undetermined						
Total	18	0.4	13	0.3	3	1

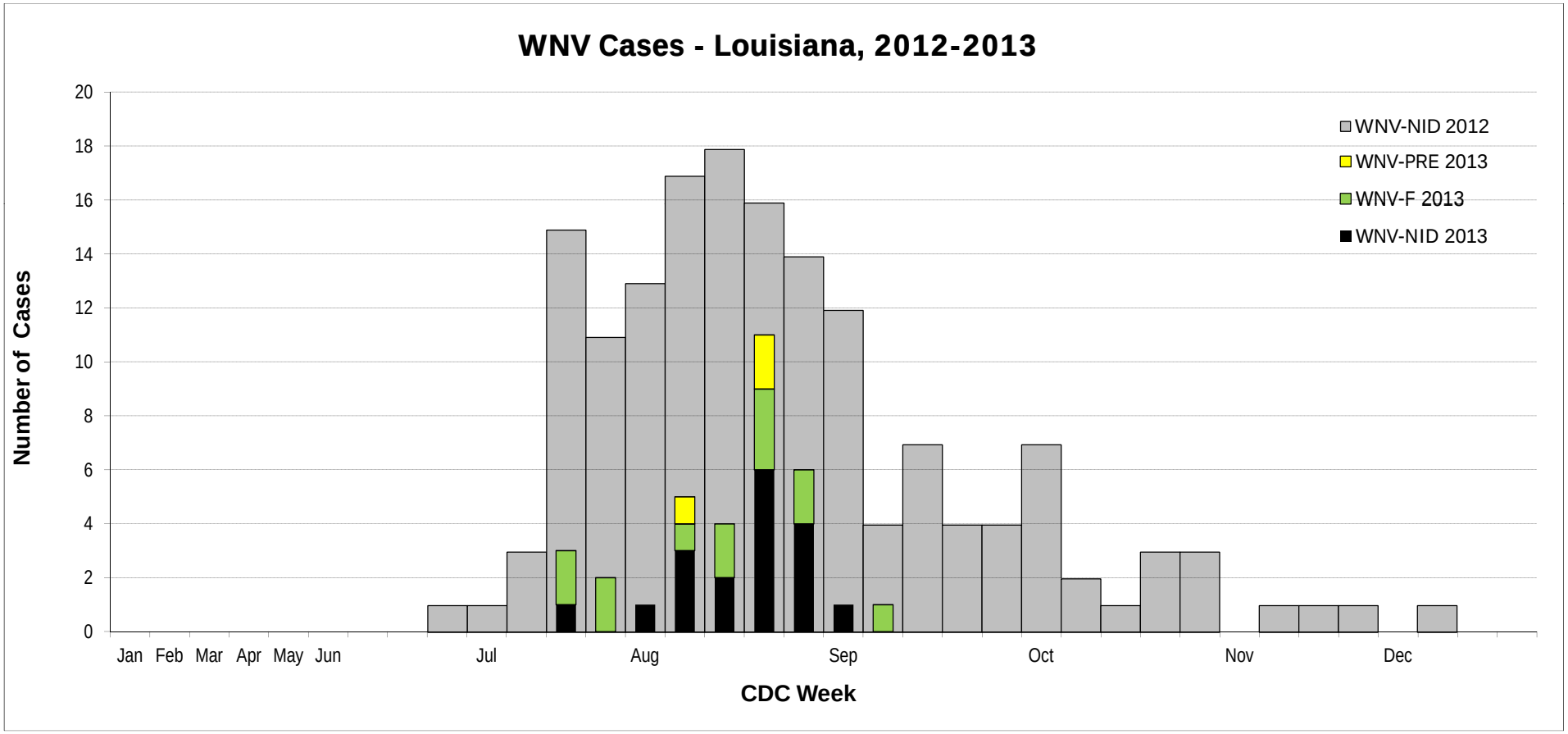
Age Group	Neuroinvasive Disease Cases by Gender			
	Male	M Incidence	Female	F Incidence
0-14	0	0.0	0	0.0
15-29	3	0.6	0	0.0
30-44	0	0.0	2	0.4
45-59	3	0.8	2	0.5
60-74	0	0.0	3	1.2
75+	5	6.0	0	0.0
Undetermined				
Total	11	0.5	7	0.3





WNV Infections by Parish According to CDC Week

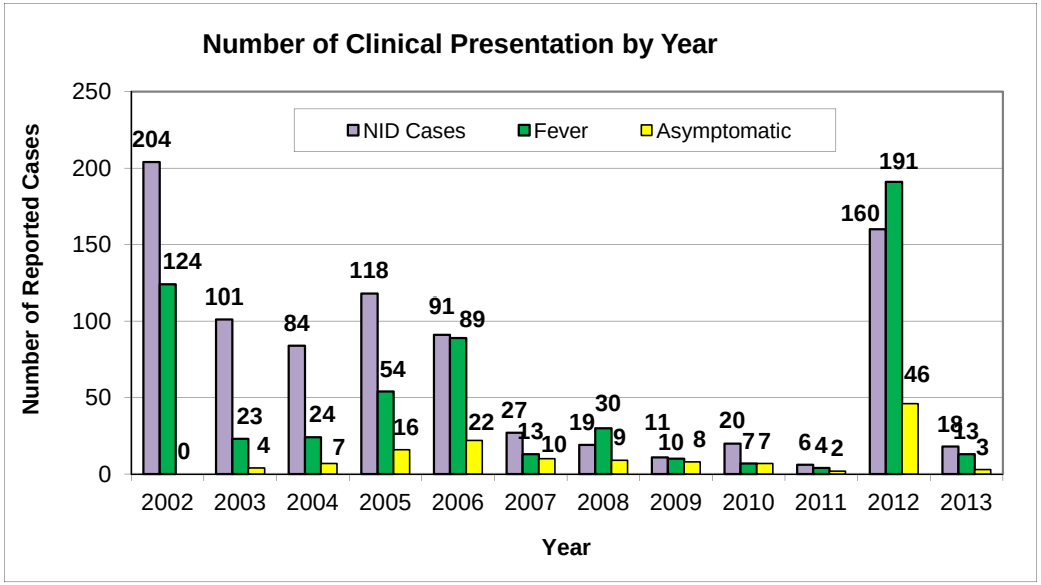
		CDC Week	1-5	6-9	10-13	14-17	18-21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Region	Parish	Total	Jan	Feb	Mar	Apr	May	Jun				Jul				Aug					Sep					Oct					Nov				Dec			
1		0																																				
2		0																																				
3		0																																				
4	Lafayette	2																	1	1																		
5	Calcasieu	1															1																					
6	Rapides	2																	1		1																	
7		0																																				
8	Caldwell	2												1			1																					
8	Ouachita	9														1		2	4	2																		
9	Livingston	1																		1																		
9	St. Tammany	1															1																					
	WNV-NID 2013	18	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	2	6	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNV-F 2013	13	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	2	3	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNV-PRE 2013	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNV-NID 2012	160	0	0	0	0	0	0	0	0	1	1	3	15	11	13	17	18	16	14	12	4	7	4	4	7	2	1	3	3	0	1	1	1	0	1	0	0



NID Summary 2002-Present

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

Total Human WNV Clinical Presentation by Year													
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
NID Cases	204	101	84	118	91	27	19	11	20	6	160	18	859
Fever	124	23	24	54	89	13	30	10	7	4	191	13	582
Asymptomatic	0	4	7	16	22	10	9	8	7	2	46	3	134
Proportion of NID/F	0.62	0.81	0.78	0.69	0.51	0.68	0.39	0.52	0.74	0.60	0.46	0.58	
Deaths	24	7	7	11	9	2	1	0	0	0	21	1	
Total Disease	328	128	115	188	202	50	58	29	34	12	397	34	



NID by Parish 2002-Present

Reg	Parish	NID 2013		Previously Reported NID Cases										
		Incidence	#	02	03	04	05	06	07	08	09	10	11	12
1	Jefferson	0.0		24	3	1	6	8	2	2	0	0	0	13
1	Orleans	0.0		10	2	1	6	12	2	2	0	0	0	11
1	Plaquemines	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
2	Ascension	0.0		6	2	1	3	10	0	0	0	2	0	3
2	East Baton Rouge	0.0		37	1	22	17	6	0	0	2	9	0	17
2	East Feliciana	0.0		2	1	1	0	0	0	0	0	0	0	2
2	Iberville	0.0		2	0	0	2	0	0	0	0	0	0	0
2	Pointe Coupee	0.0		6	0	0	0	0	0	0	0	0	0	0
2	West Baton Rouge	0.0		2	0	1	2	1	0	0	0	0	0	0
2	West Feliciana	0.0		0	0	0	0	0	0	1	0	0	0	1
3	Assumption	0.0		0	1	0	0	1	0	0	0	0	0	0
3	Lafourche	0.0		0	2	0	1	1	0	0	0	0	0	1
3	St Charles	0.0		0	0	0	0	0	0	0	0	0	0	1
3	St James	0.0		2	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
3	St Mary	0.0		0	1	0	0	0	0	0	0	0	0	0
3	Terrebonne	0.0		0	3	0	0	0	0	0	0	0	0	1
4	Acadia	0.0		0	0	0	1	0	0	0	0	0	0	0
4	Evangeline	0.0		1	0	1	0	0	1	0	0	0	0	0
4	Iberia	0.0		2	1	0	4	0	0	0	0	3	0	1
4	Lafayette	1.0	2	4	0	1	1	1	1	0	0	0	0	2
4	St Landry	0.0		1	0	3	0	0	0	0	0	0	0	0
4	St Martin	0.0		0	0	0	0	0	0	0	0	0	0	1
4	Vermillion	0.0		0	0	0	0	1	0	0	0	2	0	0
5	Allen	0.0		0	0	0	0	0	0	0	1	0	0	1
5	Beauregard	0.0		0	0	1	1	0	1	0	0	1	0	1
5	Calcasieu	0.5	1	8	1	3	2	5	0	1	0	0	2	8
5	Cameron	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

* parishes highlighted in grey have cases each year

Reg	Parish	NID 2013		Previously Reported NID Cases										
		Incidence	#	02	03	04	05	06	07	08	09	10	11	12
6	Avoyelles	0.0		2	0	0	0	1	1	1	0	0	0	1
6	Catahoula	0.0		0	1	0	0	1	0	0	0	0	0	0
6	Concordia	0.0		1	0	0	0	1	1	0	0	0	0	2
6	Grant	0.0		1	0	0	0	0	0	0	0	0	0	3
6	Rapides	1.6	2	14	2	8	7	7	2	0	1	0	0	11
6	Lasalle	0.0		0	0	0	0	0	0	0	0	0	0	0
6	Vernon	0.0		0	0	0	0	1	0	0	0	0	1	1
6	Winn	0.0		1	0	0	1	0	0	0	0	0	0	1
7	Bienville	0.0		0	0	0	0	0	0	0	0	0	0	1
7	Bossier	0.0		3	8	9	6	2	0	0	0	0	0	6
7	Caddo	0.0		5	38	8	16	3	7	3	1	0	0	19
7	Claiborne	0.0		0	1	0	0	0	0	0	0	0	0	0
7	DeSoto	0.0		1	1	0	0	0	0	0	0	0	0	3
7	Natchitoches	0.0		0	1	0	2	0	0	0	0	0	0	2
7	Red River	0.0		1	0	0	0	0	0	0	0	1	0	0
7	Sabine	0.0		0	0	0	0	0	1	0	0	0	0	0
7	Webster	0.0		0	0	1	0	1	0	0	0	0	0	4
8	Caldwell	18.9	2	0	0	1	0	0	0	0	0	0	0	1
8	East Carroll	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
8	Jackson	0.0		0	1	0	0	0	0	0	0	0	0	0
8	Lincoln	0.0		0	2	0	1	0	0	1	0	0	0	1
8	Madison	0.0		0	0	1	0	0	0	0	0	0	0	1
8	Morehouse	0.0		0	2	2	1	0	1	0	0	0	0	1
8	Ouachita	6.1	9	6	2	5	15	3	1	1	0	0	0	3
8	Richland	0.0		2	1	1	0	0	0	0	0	0	0	1
8	Tensas	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
8	West Carroll	0.0		0	2	2	0	0	1	0	0	0	0	0
9	Livingston	1.1	1	12	5	6	11	1	1	1	0	1	0	6
9	St Helena	0.0		0	2	0	2	0	0	0	0	0	0	2
9	St Tammany	0.5	1	27	4	0	3	14	0	3	4	1	1	10
9	Tangipahoa	0.0		12	6	1	2	6	1	3	1	0	1	12
9	Washington	0.0		6	2	0	3	4	2	0	1	0	1	1
	Total	0.6	18	204	101	84	118	91	27	19	11	20	6	160

CDC Weeks

CDC Week	Week Starting	Week Ending
01	12/30/2012	1/5/2013
02	1/6/2013	1/12/2013
03	1/13/2013	1/19/2013
04	1/20/2013	1/26/2013
05	1/27/2013	2/2/2013
06	2/3/2013	2/9/2013
07	2/10/2013	2/16/2013
08	2/17/2013	2/23/2013
09	2/24/2013	3/2/2013
10	3/3/2013	3/9/2013
11	3/10/2013	3/16/2013
12	3/17/2013	3/23/2013
13	3/24/2013	3/30/2013
14	3/31/2013	4/6/2013
15	4/7/2013	4/13/2013
16	4/14/2013	4/20/2013
17	4/21/2013	4/27/2013
18	4/28/2013	5/4/2013
19	5/5/2013	5/11/2013
20	5/12/2013	5/18/2013
21	5/19/2013	5/25/2013
22	5/26/2013	6/1/2013
23	6/2/2013	6/8/2013
24	6/9/2013	6/15/2013
25	6/16/2013	6/22/2013
26	6/23/2013	6/29/2013
27	6/30/2013	7/6/2013
28	7/7/2013	7/13/2013
29	7/14/2013	7/20/2013
30	7/21/2013	7/27/2013
31	7/28/2013	8/3/2013
32	8/4/2013	8/10/2013
33	8/11/2013	8/17/2013
34	8/18/2013	8/24/2013
35	8/25/2013	8/31/2013
36	9/1/2013	9/7/2013
37	9/8/2013	9/14/2013
38	9/15/2013	9/21/2013
39	9/22/2013	9/28/2013
40	9/29/2013	10/5/2013
41	10/6/2013	10/12/2013
42	10/13/2013	10/19/2013
43	10/20/2013	10/26/2013
44	10/27/2013	11/2/2013
45	11/3/2013	11/9/2013
46	11/10/2013	11/16/2013
47	11/17/2013	11/23/2013
48	11/24/2013	11/30/2013
49	12/1/2013	12/7/2013
50	12/8/2013	12/14/2013
51	12/15/2013	12/21/2013
52	12/22/2013	12/28/2013