Louisiana Arbovirus Surveillance Summary 2014

CDC Week 43 From: 01/01/2014-10/25/2014

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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 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 1-43 From: 01/01/2014-10/25/2014

Disease	Mosquito Pools	Avian *	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD ‡	Deaths
CAL									
EEE	1		11						
SLE	11	1							
WEE									
WNV	926	61	1	58	58	19	135	15	6
Total	938	62	12	58	58	19	135	15	6

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 1-43 From: 01/01/2013-10/26/2013

Disease	Mosquito Pools	Avian	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD	Deaths
CAL									
EEE			8						
SLE		3							
WEE									
WNV	194	112	3	34	20	4	58	5	4
Total	194	115	11	34	20	4	58	5	4

International Travel-Associated Case Summary

** Chikungunya is not a nationally notifiable disease in the United States

Data from CDC Week 1-43 From: 01/01/2014-10/25/2014

Disease	Human Fever F
Dengue Virus	2
Chikungunya Virus	13

Countries of Origin:	
British Virgin Islands	1
Dominican Republic	7
Haiti	5
S.E. Asia	1
Venezuela	1

Case tallies included in the weekly arboviral surveillance report include confirmed and probable cases. Suspect cases are not included. Case tallies reported to CDC do not include suspect cases.

All cases of international travel-associated disease were reported among persons who acquired the infection during travel out of country to an area with endemic transmission or experiencing an outbreak in the two weeks prior to onset of symptoms.

Case tallies included in the weekly arboviral surveillance report include confirmed and probable cases. Suspect cases are not included. Case tallies reported to CDC do not include suspect cases.

Arbovirus by Parish

Data from CDC Week: 1-43 From: 01/01/2014-10/25/2014

Parish	WNV							SLE				EEE				CAL	CHIK	DEN
	M	A	E	Human				M	A	E	Human	M	A	E	Human	Human	Human	Human
				NID	F	PRE	Total											
Acadia		1					0							1				
Ascension	53			4	2	2	8							1				
Avoyelles							0							1				
Beauregard							0							1				
Bossier	3			2	3		5											
Caddo	54			16	18	4	38											
Calcasieu					1		1											
East Baton Rouge	279	8		20	17	5	42										1	
Evangeline							0							2				
Franklin		1	1	1			1											
Grant							0										1	
Iberia	4						0											
Iberville					1	1	2											
Jefferson	1	22					0		1								3	1
Jefferson Davis					1		1											
Lafayette		5					0											
Lafourche	1			4	1		5										1	
Livingston	78			2	6	5	13							1			1	
Natchitoches							0										1	
Orleans	6				3		3	10									4	
Ouachita	45			2	1		3											
Plaquemines	1						0											
Pointe Coupee				2	1	1	4											
Rapides						1	1											
St. Bernard							0	1										
St. Charles		12		1			1											
St. James	3						0											
St. John	2						0											
St. Mary	1						0					1						
St. Martin	2	6					0											1
St.Tammany	42			2	2		4											
Tangipahoa	3				1		1										1	
Terrebonne		6		1			1											
Vermilion							0							4				
Washington				1			1											
West Baton Rouge	348						0											
Total	926	61	1	58	58	19	135	11	1	0	0	1	0	11	0	0	13	2

M = Mosquito
A = Avian
E = Equine

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

Arbovirus by Parish

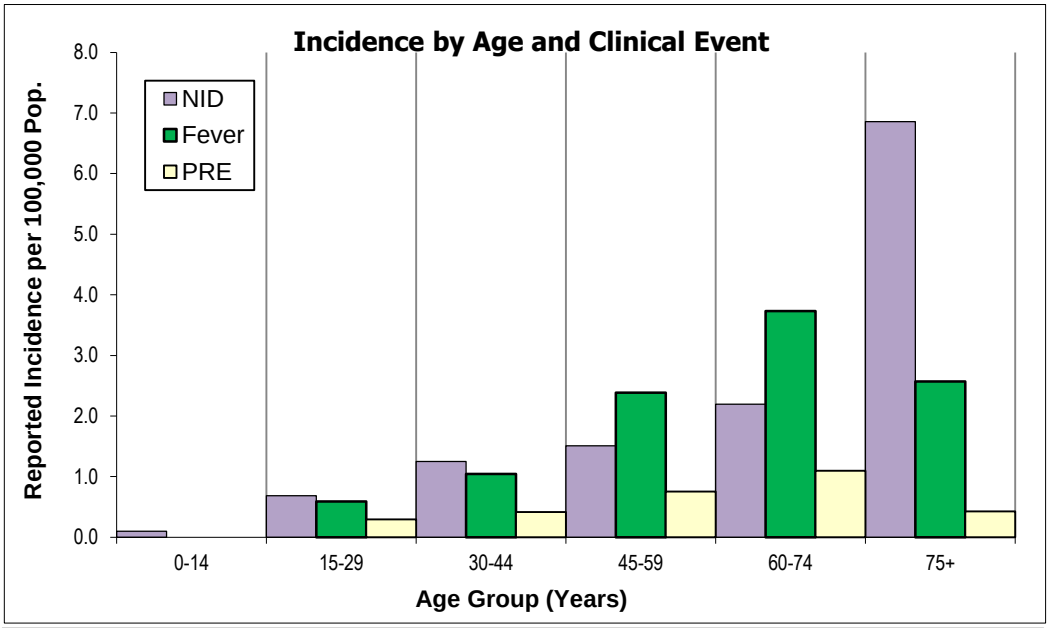
All human and equine case tallies are reported by the case's parish of residence, not the parish where the exposure occurred.
All cases of international travel-associated disease were reported among persons who acquired the infection during travel out of the country.

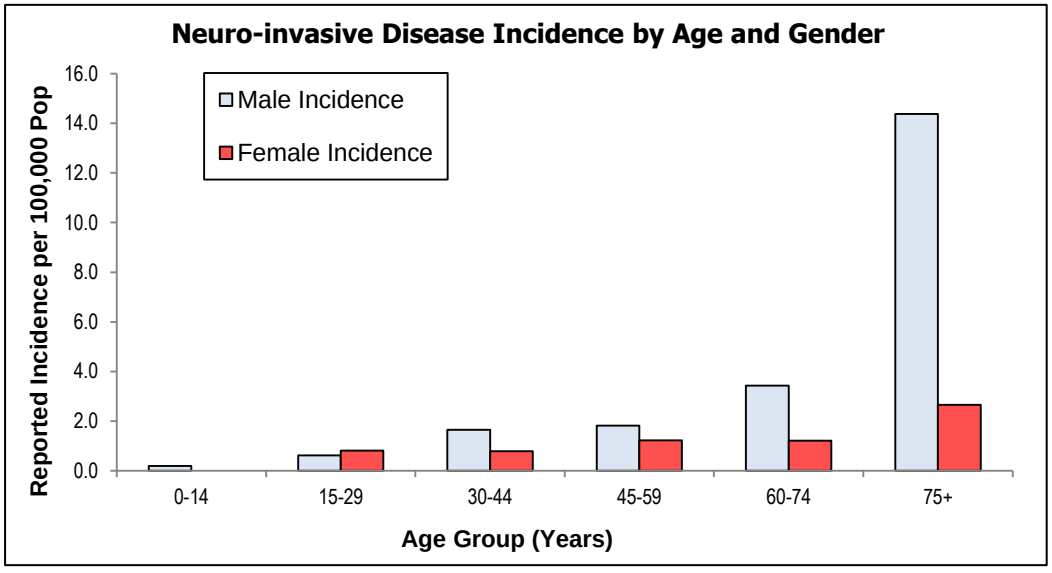
WNV = West Nile virus
SLE = St. Louis Encephalitis virus
CAL = California serogroup viruses (including La Crosse)
EEE = Eastern Equine Encephalitis virus
WEE = Western Equine Encephalitis virus
CHIK = Chikungunya Fever
DEN = Dengue Fever

WNV Human Clinical Presentation

Age Group	Clinical Classification					
	NID Cases	Incidence	Fever Cases	Incidence	PRE Cases	Deaths
0-14	1	0.1	0	0.0		
15-29	7	0.7	6	0.6	3	
30-44	12	1.3	10	1.0	4	
45-59	12	1.5	19	2.4	6	0
60-74	10	2.2	17	3.7	5	2
75+	16	6.9	6	2.6	1	4
Undetermined						
Total	58	1.3	58	1.3	19	6

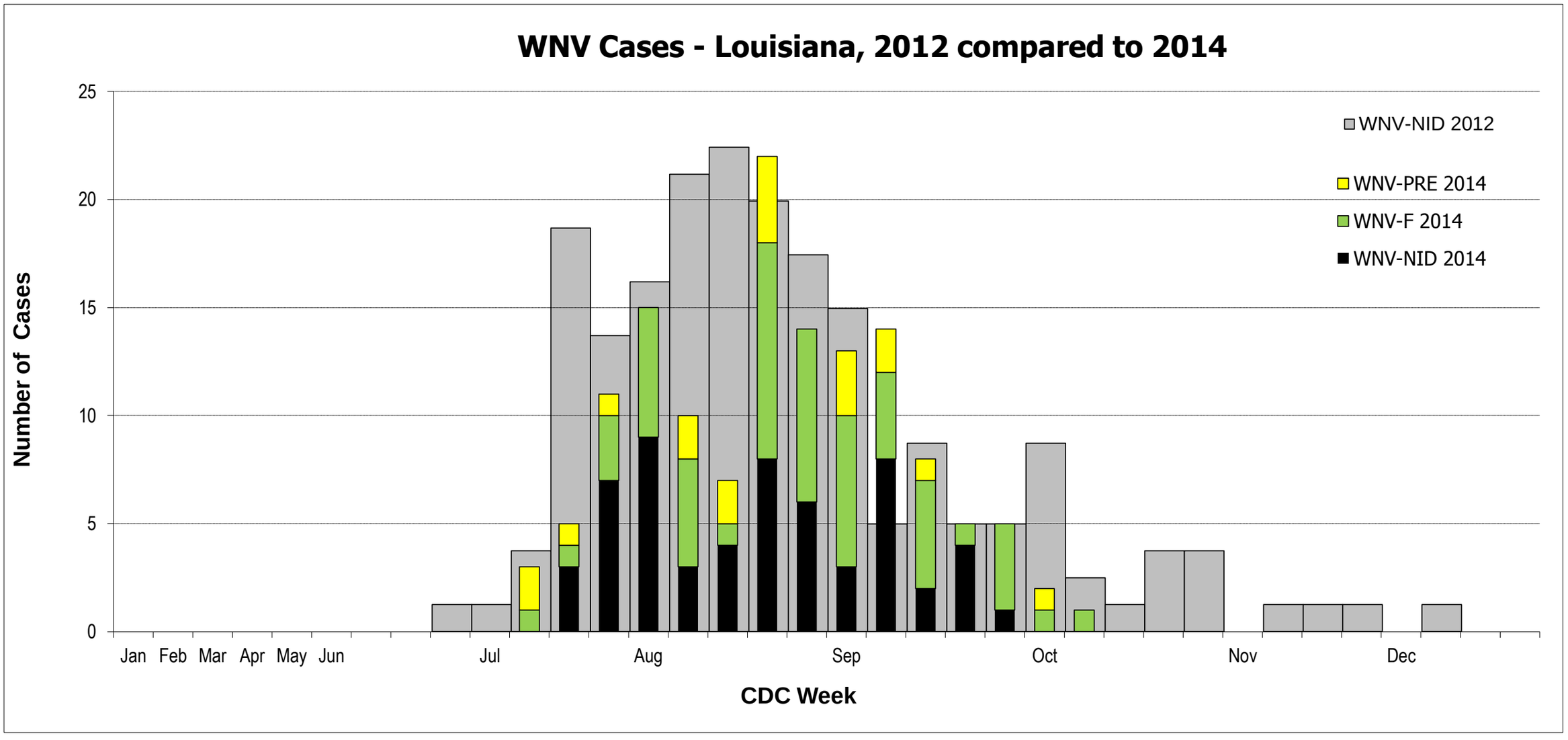
Age Group	Neuroinvasive Disease Cases by Gender			
	Male	M Incidence	Female	F Incidence
0-14	1	0.2	0	0.0
15-29	3	0.6	4	0.8
30-44	8	1.6	4	0.8
45-59	7	1.8	5	1.2
60-74	7	3.4	3	1.2
75+	12	14.4	4	2.7
Undetermined				
Total	38	1.8	20	0.9





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	Ascension	4													1			1			2																
2	East Baton Rouge	20											1	2	1	2	2	3	5	1	1	1	1														
2	Pointe Coupee	2																			2																
3	Lafourche	4																		1	2			1													
3	St. Charles	1																					1														
3	Terrebonne	1																	1																		
7	Bossier	2																2																			
7	Caddo	16											2	4	6		1	2					1														
8	Franklin	1																					1														
8	Ouachita	2															1					1															
9	Livingston	2													1	1																					
9	St. Tammany	2												1						1																	
9	Washingon	1																			1																
	WNV-NID 2014	58	0	0	0	0	0	0	0	0	0	0	3	7	9	3	4	8	6	3	8	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNV-F 2014	58	0	0	0	0	0	0	0	0	0	1	1	3	6	5	1	10	8	7	4	5	1	4	1	1	0	0	0	0	0	0	0	0	0	0	0
	WNV-PRE 2014	19	0	0	0	0	0	0	0	0	0	2	1	1	0	2	2	4	0	3	2	1	0	0	1	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



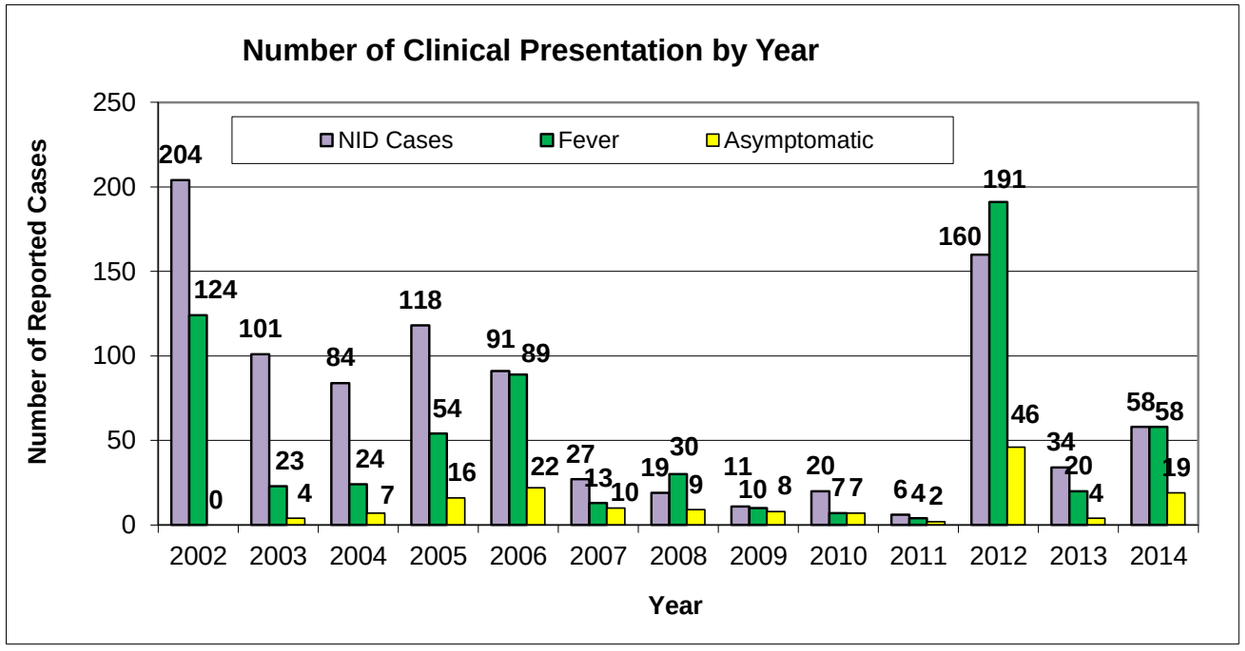
NID Summary 2002-Present

WNV-NID Cases by CDC Week by Year

	Week	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jan	1													
	3													
	7													
March	10													
	13													
	17													
May	19													
	20	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
June	22	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
	24	2	0	0	0	0	0	0	0	0	0	0	0	0
	25	2	2	0	0	0	0	0	1	0	0	1	0	0
July	26	11	0	0	0	1	0	0	1	0	0	1	0	0
	27	6	3	3	4	1	0	0	2	3	0	3	0	0
	28	9	5	2	5	4	0	0	0	0	1	15	1	3
	29	23	5	2	13	5	0	0	1	1	1	11	0	7
August	30	23	8	8	8	6	0	2	1	2	0	13	1	9
	31	21	10	5	21	7	1	1	0	0	0	17	3	3
	32	24	7	15	11	14	3	2	1	1	1	18	3	4
	33	21	8	7	9	13	2	1	2	1	0	16	7	8
	34	14	6	3	8	7	2	3	1	2	0	14	6	6
September	35	8	6	5	6	6	5	3	0	3	1	12	2	3
	36	13	4	5	8	9	3	2	0	1	1	4	2	8
	37	8	9	3	9	6	3	0	1	2	1	7	3	2
	38	6	4	4	2	3	1	0	0	1	0	4	0	4
	39	3	2	5	4	4	1	0	0	0	0	4	1	1
October	40	3	4	5	4	1	3	3	0	1	0	7	3	0
	41	3	2	4	3	1	0	0	0	0	0	2	1	0
	42	3	1	2	3	1	0	0	0	0	0	1	1	0
	43	0	2	0	0	0	3	0	0	0	0	3	0	0
	44	0	4	0	0	1	0	0	0	0	0	3	0	0
November	45	0	2	2	0	0	0	1	0	0	0	0	0	0
	46	0	1	1	0	0	0	0	0	0	0	1	0	0
	47	1	1	2	0	1	0	1	0	0	0	1	0	0
	48	0	2	1	0	0	0	0	0	2	0	1	0	0
December	49	0	3	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
	51	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
NID Total		204	101	84	118	91	27	19	11	20	6	160	34	58

Total Human WNV Clinical Presentation by Year

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
NID Cases	204	101	84	118	91	27	19	11	20	6	160	34	58	933
Fever	124	23	24	54	89	13	30	10	7	4	191	20	58	647
Asymptomatic	0	4	7	16	22	10	9	8	7	2	46	4	19	154
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	0.63	0.50	
Deaths	24	7	7	11	9	2	1	0	0	0	21	4	6	
Total Disease	328	128	115	188	202	50	58	29	34	12	397	58	135	



NID by Parish 2002-Present

Reg	Parish	NID 2014		Previously Reported NID Cases											
		Incidence	#	02	03	04	05	06	07	08	09	10	11	12	13
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	5.2	4	6	2	1	3	10	0	0	0	2	0	3	
2	East Baton Rouge	4.8	20	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	8.8	2	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	4.4	4	0	2	0	1	1	0	0	0	0	0	1	
3	St Charles	2.1	1	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	1.0	1	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	1
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	0.0		4	0	1	1	1	1	0	0	0	0	2	9
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	0.0		8	1	3	2	5	0	1	0	0	2	8	1
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	
6	Avoyelles	0.0		2	0	0	0	1	1	1	0	0	0	1	0
6	Catahoula	0.0		0	1	0	0	1	0	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	0.0		14	2	8	7	7	2	0	1	0	0	11	4
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	2.0	2	3	8	9	6	2	0	0	0	0	0	6	
7	Caddo	6.3	16	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	0.0		0	0	1	0	0	0	0	0	0	0	1	3
8	East Carroll	0.0		0	0	0	0	0	0	0	0	0	0	0	
8	Franklin	4.7	1	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	1.4	2	6	2	5	15	3	1	1	0	0	0	3	14
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	2.2	2	12	5	6	11	1	1	1	0	1	0	6	1
9	St Helena	0.0		0	2	0	2	0	0	0	0	0	0	2	
9	St Tammany	1.0	2	27	4	0	3	14	0	3	4	1	1	10	1
9	Tangipahoa	0.0		12	6	1	2	6	1	3	1	0	1	12	
9	Washington	2.3	1	6	2	0	3	4	2	0	1	0	1	1	
	Total	2.0	58	204	101	84	118	91	27	19	11	20	6	160	34

* parishes highlighted in grey have cases each year

CDC Weeks

CDC Week	Week Starting	Week Ending
01	12/29/2013	1/4/2014
02	1/5/2014	1/11/2014
03	1/12/2014	1/18/2014
04	1/19/2014	1/25/2014
05	1/26/2014	2/1/2014
06	2/2/2014	2/8/2014
07	2/9/2014	2/15/2014
08	2/16/2014	2/22/2014
09	2/23/2014	3/1/2014
10	3/2/2014	3/8/2014
11	3/9/2014	3/15/2014
12	3/16/2014	3/22/2014
13	3/23/2014	3/29/2014
14	3/30/2014	4/5/2014
15	4/6/2014	4/12/2014
16	4/13/2014	4/19/2014
17	4/20/2014	4/26/2014
18	4/27/2014	5/3/2014
19	5/4/2014	5/10/2014
20	5/11/2014	5/17/2014
21	5/18/2014	5/24/2014
22	5/25/2014	5/31/2014
23	6/1/2014	6/7/2014
24	6/8/2014	6/14/2014
25	6/15/2014	6/21/2014
26	6/22/2014	6/28/2014
27	6/29/2014	7/5/2014
28	7/6/2014	7/12/2014
29	7/13/2014	7/19/2014
30	7/20/2014	7/26/2014
31	7/27/2014	8/2/2014
32	8/3/2014	8/9/2014
33	8/10/2014	8/16/2014
34	8/17/2014	8/23/2014
35	8/24/2014	8/30/2014
36	8/31/2014	9/6/2014
37	9/7/2014	9/13/2014
38	9/14/2014	9/20/2014
39	9/21/2014	9/27/2014
40	9/28/2014	10/4/2014
41	10/5/2014	10/11/2014
42	10/12/2014	10/18/2014
43	10/19/2014	10/25/2014
44	10/26/2014	11/1/2014
45	11/2/2014	11/8/2014
46	11/9/2014	11/15/2014
47	11/16/2014	11/22/2014
48	11/23/2014	11/29/2014
49	11/30/2014	12/6/2014
50	12/7/2014	12/13/2014
51	12/14/2014	12/20/2014
52	12/21/2014	12/27/2014