

# Louisiana Arbovirus Surveillance Summary 2015

CDC Week 37

From: 01/01/2015-09/19/2015

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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 1-37 From: 01/01/2015-09/19/2015

Disease	Mosquito Pools	Avian *	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD ‡	Deaths
CAL									
EEE	0		2	1					
SLE	0	2							
WEE									
WNV	473	53	1	30	7	13	50	14	1
Total	473	55	3	31	7	13	50	14	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

‡ 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 1-38 From: 01/01/2014-09/20/2014

Disease	Mosquito Pools	Avian *	Equine	Human					
				Neuroinvasive NID	Fever F	Asymptomatic PRE	Total	Positive Blood Donors PVD ‡	Deaths
CAL									
EEE	1		10						
SLE	11	1							
WEE									
WNV	910	42	1	53	47	18	118	14	5
Total	922	43	11	53	47	18	118	14	5

# Arbovirus by Parish

Data from CDC Week: 1-37 From: 01/01/2015-09/19/2015

Parish	WNV						SLE				EEE				CAL
	M	A	E	Human			M	A	E	Human	M	A	E	Human	Human
				NID	F	PRE									
Acadia	1	8				0	2								
Allen						0									
Ascension	59			2	1	3	6							1	
Avoyelles				1		1	2								
Beauregard						0						1			
Bossier			1	1		1	2								
Caddo	58			3	2	1	6								
Calcasieu	6				2		2								
East Baton Rouge	10	2				2	2								
Iberia						0									
Iberville				1		1	2								
Jefferson	3	27				1	1								
Jefferson Davis	4			3			3								
Lafayette						0									
Lafourche				1			1								
Livingston						0									
Orleans	20			1			1								
Ouachita	83			4			4								
Plaquemines	2					0									
Pointe Coupee				1	1		2								
Rapides				7		2	9								
St. Bernard	1					0									
St. Charles		4				0									
St. James	6					0									
St. John	3					0									
St. Landry				2		1	3								
St. Martin	32	9		1			1								
St. Mary	9	3				0									
St. Tammany	69			1			1								
Tangipahoa	36			1			1								
Terrebonne		2				0						1			
Washington					1	0	1								
West Baton Rouge	71					0									
<b>Total</b>	<b>473</b>	<b>55</b>	<b>1</b>	<b>30</b>	<b>7</b>	<b>13</b>	<b>50</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>

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

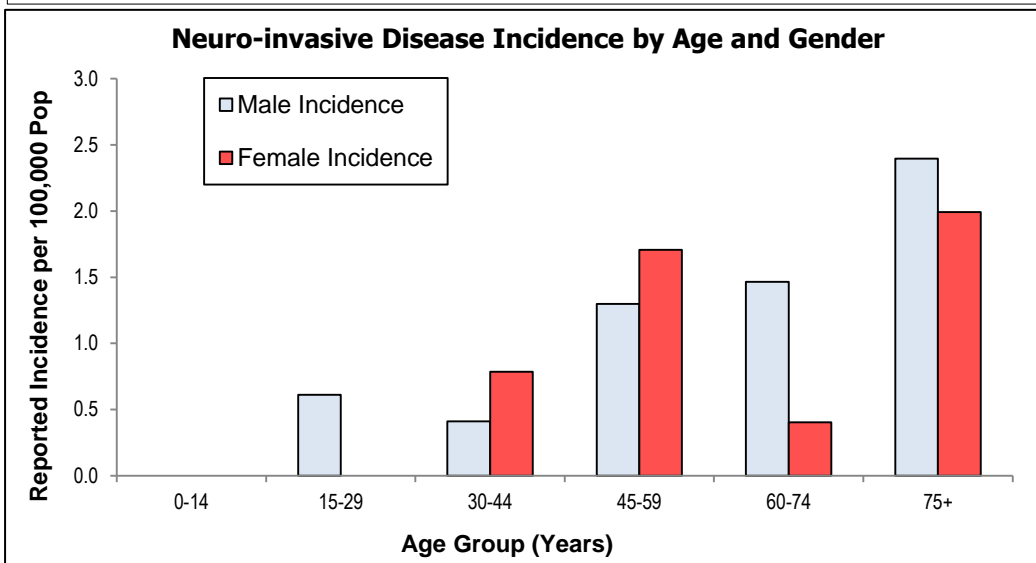
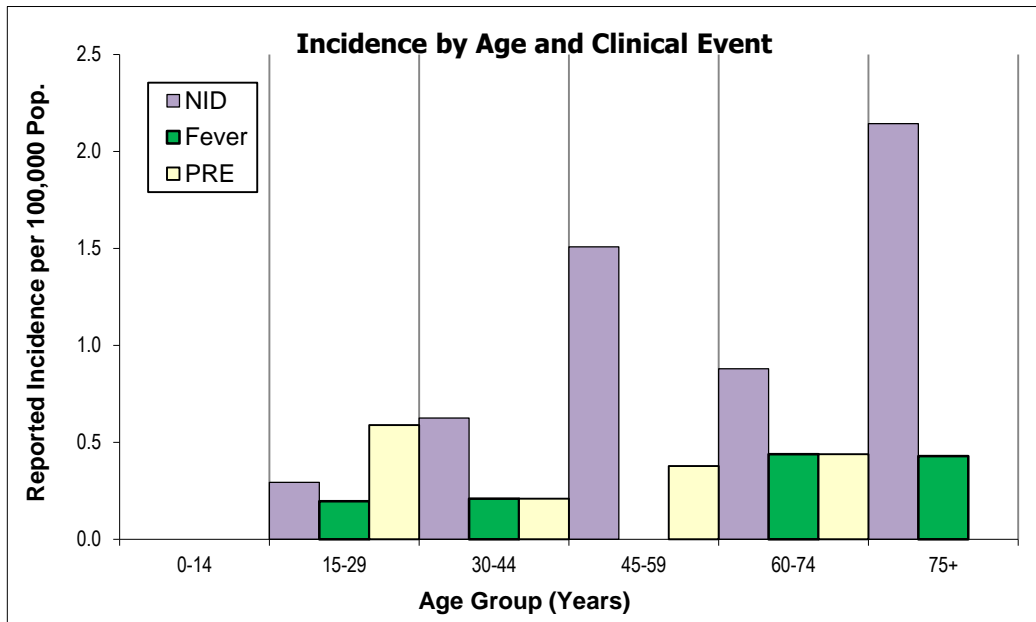
M = Mosquito

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		
15-29	3	0.3	2	0.2	6	
30-44	6	0.6	2	0.2	2	
45-59	12	1.5	0	0.0	3	1
60-74	4	0.9	2	0.4	2	0
75+	5	2.1	1	0.4		0
Undetermined						
<b>Total</b>	<b>30</b>	<b>0.7</b>	<b>7</b>	<b>0.2</b>	<b>13</b>	<b>1</b>

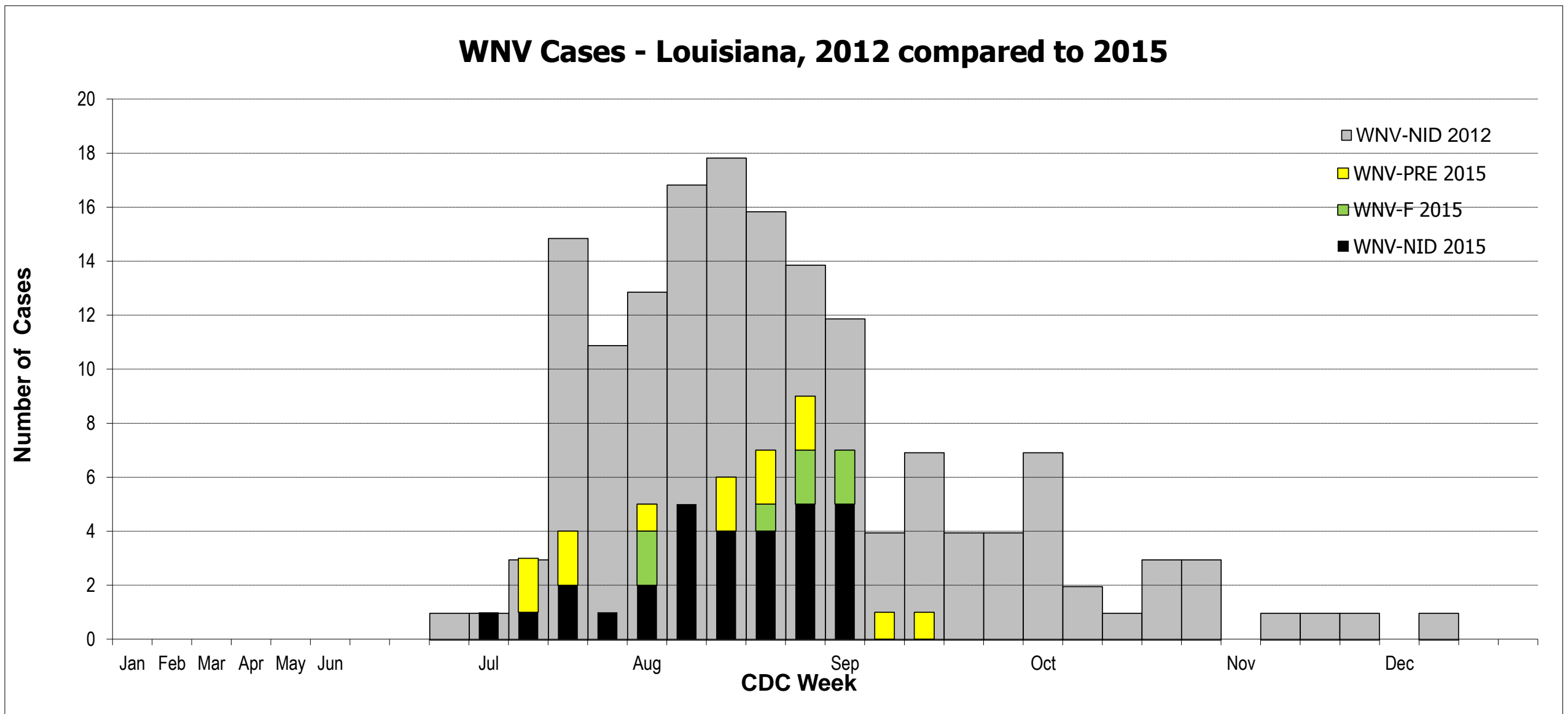
Age Group	Neuroinvasive Disease Cases by Gender			
	Male	M Incidence	Female	F Incidence
0-14	0	0.0	0	0.0
15-29	3	0.6	0	0.0
30-44	2	0.4	4	0.8
45-59	5	1.3	7	1.7
60-74	3	1.5	1	0.4
75+	2	2.4	3	2.0
Undetermined				
<b>Total</b>	<b>15</b>	<b>0.7</b>	<b>15</b>	<b>0.7</b>



# WNV Infections by Parish According to CDC Week

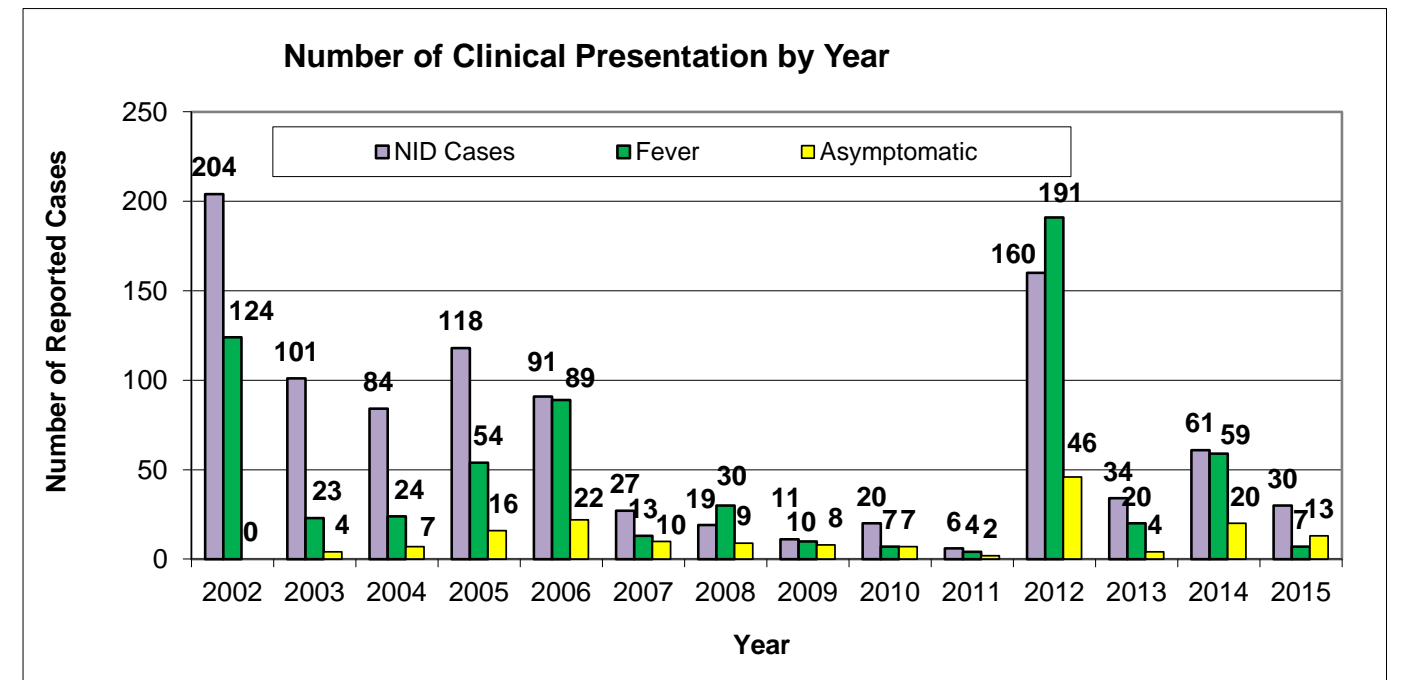
		CDC Week		1-5	6-9	10-13	14-17	18-21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52			
Region	Parish	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec																												
1	Orleans	1																																								
2	Ascension	2																																								
2	Iberville	1																																								
2	Pointe Coupee	1																																								
3	Lafourche	1																																								
4	St. Landry	2																																								
4	St. Martin	1																																								
5	Jefferson Davis	3																																								
6	Avoyelles	1																																								
6	Rapides	7																																								
7	Bossier	1																																								
7	Caddo	3																																								
8	Ouachita	4																																								
9	St. Tammany	1																																								
9	Tangipahoa	1																																								
<b>WNV-NID 2015</b>		<b>30</b>	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	2	5	4	4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<b>WNV-F 2015</b>		<b>7</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>WNV-PRE 2015</b>		<b>13</b>	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	2	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>WNV-NID 2012</b>		<b>160</b>	0	0	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		

## WNV Cases - Louisiana, 2012 compared to 2015



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

Total Human WNV Clinical Presentation by Year															
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
<b>NID Cases</b>	204	101	84	118	91	27	19	11	20	6	160	34	61	30	966
<b>Fever</b>	124	23	24	54	89	13	30	10	7	4	191	20	59	7	655
<b>Asymptomatic</b>	0	4	7	16	22	10	9	8	7	2	46	4	20	13	168
<b>Proportion of NID/F</b>	0.62	0.81	0.78	0.69	0.51	0.68	0.39	0.52	0.74	0.60	0.46	0.63	0.51	0.81	
<b>Deaths</b>	24	7	7	11	9	2	1	0	0	0	21	4	12	1	
<b>Total Disease</b>	<b>328</b>	<b>128</b>	<b>115</b>	<b>188</b>	<b>202</b>	<b>50</b>	<b>58</b>	<b>29</b>	<b>34</b>	<b>12</b>	<b>397</b>	<b>58</b>	<b>140</b>	<b>50</b>	



Reg	Parish	NID 2015		Previously Reported NID Cases												
		Incidence	#	02	03	04	05	06	07	08	09	10	11	12	13	14
1	Jefferson	0.0		24	3	1	6	8	2	2	0	0	0	13	0	0
1	Orleans	0.2	1	10	2	1	6	12	2	2	0	0	0	11	0	0
1	Plaquemines	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
2	Ascension	2.6	2	6	2	1	3	10	0	0	0	2	0	3	0	4
2	East Baton Rouge	0.0		37	1	22	17	6	0	0	2	9	0	17	0	21
2	East Feliciana	0.0		2	1	1	0	0	0	0	0	0	0	2	0	0
2	Iberville	3.0	1	2	0	0	2	0	0	0	0	0	0	0	0	1
2	Pointe Coupee	4.4	1	6	0	0	0	0	0	0	0	0	0	0	0	2
2	West Baton Rouge	0.0		2	0	1	2	1	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
3	Assumption	0.0		0	1	0	0	1	0	0	0	0	0	0	0	0
3	Lafourche	1.1	1	0	2	0	1	1	0	0	0	0	0	1	0	4
3	St Charles	0.0		0	0	0	0	0	0	0	0	0	0	1	0	1
3	St James	0.0		2	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
3	St Mary	0.0		0	1	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
4	Acadia	0.0		0	0	0	1	0	0	0	0	0	0	0	1	0
4	Evangeline	0.0		1	0	1	0	0	1	0	0	0	0	0	0	0
4	Iberia	0.0		2	1	0	4	0	0	0	0	3	0	1	0	0
4	Lafayette	0.0		4	0	1	1	1	1	0	0	0	0	2	9	0
4	St Landry	2.3	2	1	0	3	0	0	0	0	0	0	0	0	0	0
4	St Martin	2.1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
4	Vermillion	0.0		0	0	0	0	1	0	0	0	2	0	0	0	0
5	Allen	0.0		0	0	0	0	0	0	0	1	0	0	1	0	0
5	Beauregard	0.0		0	0	1	1	0	1	0	0	1	0	1	0	0
5	Calcasieu	0.0		8	1	3	2	5	0	1	0	0	2	8	1	0
5	Cameron	0.0		0	0	0	0	0	0	0	0	0	0	0	0	0
5	Jefferson Davis	9.5	3	0	1	1	0	0	0	0	0	0	0	0	0	0

\* parishes highlighted in grey have cases each year

Reg	Parish	NID 2015		Previously Reported NID Cases												
		Incidence	#	02	03	04	05	06	07	08	09	10	11	12	13	14
6	Avoyelles	2.4	1	2	0	0	0	1	1	1	0	0	0	1	0	0
6	Catahoula	0.0		0	1	0	0	1	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
6	Grant	0.0		1	0	0	0	0	0	0	0	0	0	0	3	0
6	Rapides	5.5	7	14	2	8	7	7	2	0	1	0	0	11	4	0
6	Lasalle	0.0		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	0	1	1	0
6	Winn	0.0		1	0	0	1	0	0	0	0	0	0	0	1	0
7	Bienville	0.0		0	0	0	0	0	0	0	0	0	0	0	1	0
7	Bossier	1.0	1	3	8	9	6	2	0	0	0	0	0	6	0	2
7	Caddo	1.2	3	5	38	8	16	3	7	3	1	0	0	19	0	16
7	Claiborne	0.0		0	1	0	0	0	0	0	0	0	0	0	0	0
7	DeSoto	0.0		1	1	0	0	0	0	0	0	0	0	3	0	0
7	Natchitoches	0.0		0	1	0	2	0	0	0	0	0	0	2	0	1
7	Red River	0.0		1	0	0	0	0	0	0	0	0	1	0	0	0
7	Sabine	0.0		0	0	0	0	0	1	0	0	0	0	0	0	0
7	Webster	0.0		0	0	1	0	1	0	0	0	0	0	0	4	0
8	Caldwell	0.0		0	0	1	0	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	0	0
8	Franklin	0.0		0	0	1	1	0	0	0	0	0	0	0	1	0
8	Jackson	0.0		0	1	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
8	Madison	0.0		0	0	1	0	0	0	0	0	0	0	1	0	0
8	Morehouse	0.0		0	2	2	1	0	1	0	0	0	0	1	0	0
8	Ouachita	2.7	4	6	2	5	15	3	1	1	0	0	0	3	14	2
8	Richland	0.0		2	1	1	0	0	0	0	0	0	0	1	0	0
8	Tensas	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
8	West Carroll	0.0		0	2	2	0	0	1	0	0	0	0	0	0	0
9	Livingston	0.0		12	5	6	11	1	1	1	0	1	0	6	1	2
9	St Helena	0.0		0	2	0	2	0	0	0	0	0	0	2	0	0
9	St Tammany	0.5	1	27	4	0	3	14	0	3	4	1	1	10	1	2
9	Tangipahoa	1.0	1	12	6	1	2	6	1	3	1	0	1	12	0	0
9	Washington	0.0		6	2	0	3	4	2	0	1	0	1	1	0	1
	<b>Total</b>	<b>1.1</b>	<b>30</b>	<b>204</b>	<b>101</b>	<b>84</b>	<b>118</b>	<b>91</b>	<b>27</b>	<b>19</b>	<b>11</b>	<b>20</b>	<b>6</b>	<b>160</b>	<b>34</b>	<b>61</b>

CDC Week	Week Starting	Week Ending
01	1/4/2015	1/10/2015
02	1/11/2015	1/17/2015
03	1/18/2015	1/24/2015
04	1/25/2015	1/31/2015
05	2/1/2015	2/7/2015
06	2/8/2015	2/14/2015
07	2/15/2015	2/21/2015
08	2/22/2015	2/28/2015
09	3/1/2015	3/7/2015
10	3/8/2015	3/14/2015
11	3/15/2015	3/21/2015
12	3/22/2015	3/28/2015
13	3/29/2015	4/4/2015
14	4/5/2015	4/11/2015
15	4/12/2015	4/18/2015
16	4/19/2015	4/25/2015
17	4/26/2015	5/2/2015
18	5/3/2015	5/9/2015
19	5/10/2015	5/16/2015
20	5/17/2015	5/23/2015
21	5/24/2015	5/30/2015
22	5/31/2015	6/6/2015
23	6/7/2015	6/13/2015
24	6/14/2015	6/20/2015
25	6/21/2015	6/27/2015
26	6/28/2015	7/4/2015
27	7/5/2015	7/11/2015
28	7/12/2015	7/18/2015
29	7/19/2015	7/25/2015
30	7/26/2015	8/1/2015
31	8/2/2015	8/8/2015
32	8/9/2015	8/15/2015
33	8/16/2015	8/22/2015
34	8/23/2015	8/29/2015
35	8/30/2015	9/5/2015
36	9/6/2015	9/12/2015
37	9/13/2015	9/19/2015
38	9/20/2015	9/26/2015
39	9/27/2015	10/3/2015
40	10/4/2015	10/10/2015
41	10/11/2015	10/17/2015
42	10/18/2015	10/24/2015
43	10/25/2015	10/31/2015
44	11/1/2015	11/7/2015
45	11/8/2015	11/14/2015
46	11/15/2015	11/21/2015
47	11/22/2015	11/28/2015
48	11/29/2015	12/5/2015
49	12/6/2015	12/12/2015
50	12/13/2015	12/19/2015
51	12/20/2015	12/26/2015
52	12/27/2015	1/2/2016