

# Louisiana Arbovirus Surveillance Summary 2012

CDC Week 53

From: 01/01/2012-12/31/2012

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## Report Summary

**The goal of the surveillance** for West Nile Infections in Humans is to describe the disease burden of the West Nile infection on the human population. Only West Nile Neuro-invasive diseases (encephalitis or meningitis) get reliably reported. For every NID case there are about 10 cases of Fever and about 90 completely asymptomatic infections. Only 1% of the WN-Fever and asymptomatic 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:** As of this report, 397 human WNV infections have been identified. There are 46 asymptomatic cases, 34 identified through screening of blood donors. Of the 351 WNV cases with symptoms, 160 are classified as WNV neuroinvasive disease (NID) cases, the most severe presentation of the disease, and 191 are classified as WNV fever cases, the WNV-related mild, febrile illness.

There have been 0 cases of California group Encephalitis (LaCrosse Encephalitis), 0 cases of Eastern Equine Encephalitis and 0 cases of St. Louis Encephalitis reported. Sporadic cases of these arboviruses often occur from year to year in the state.

**Horses:** There have been 75 confirmed cases of equine WNV and 59 confirmed cases of EEE in Louisiana this year.

**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. There have been over 27,044 mosquito pools from over 29 parishes submitted for testing. 4 EEE positive pools, 0 SLE positive pools and 2,503 WNV positive pools have been found in 29 parishes.

West Nile Virus (WNV) Clinical Presentation		
Neuroinvasive Disease	NID	160
Fever	F	191
Asymptomatic Present Infections	PRE	46
Positive Blood Donors	PVD	34
Deaths		21

### 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 immunocompetent 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). 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. It has been inconsistent in the past. It is limited to those occurring within 2 weeks for onset.

Eastern Equine Encephalitis (EEE) Case			
CDC Week Onset	Parish	Age	Gender

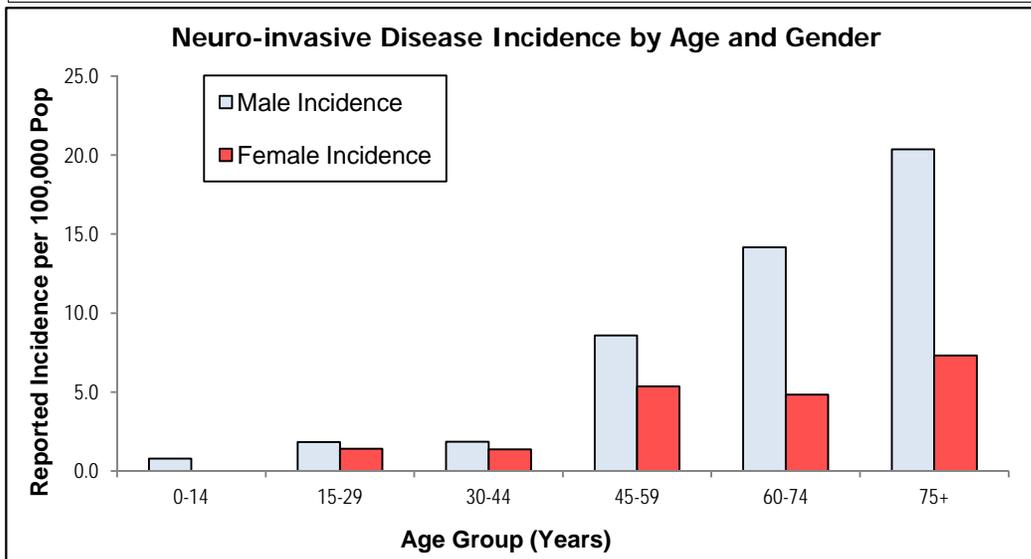
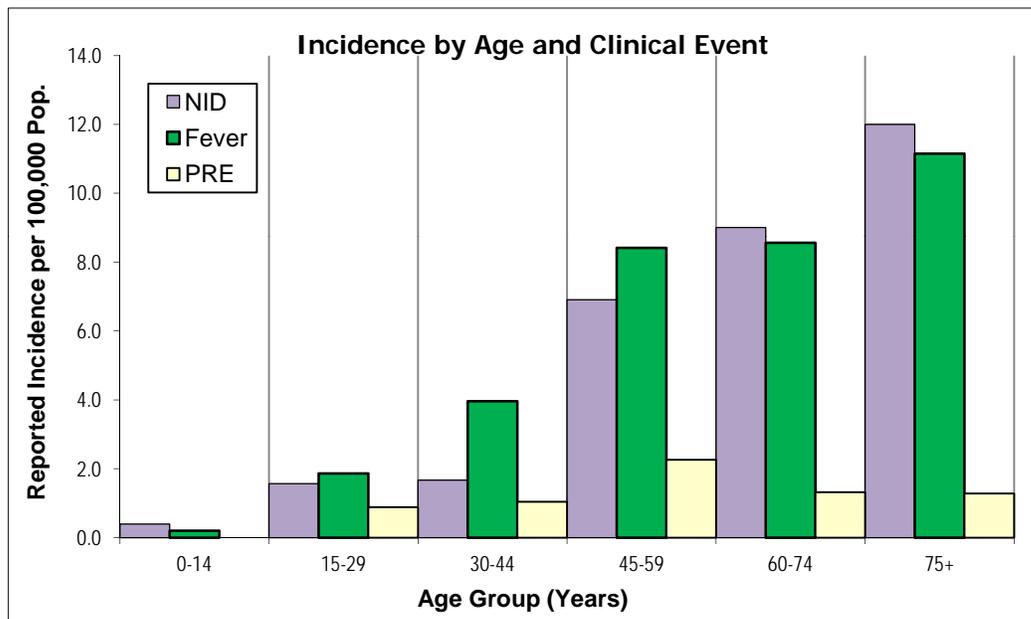
LaCrosse (CAL) Cases			
CDC Week Onset	Parish	Age	Gender

St. Louis Encephalitis and Fever (SLE) Cases			
CDC Week Onset	Parish	Age	Gender

**Limitations:** Human data have very limited usefulness for mosquito control purposes. Only 2% 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 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.

Age Group	Clinical Classification					
	NID Cases	Incidence	Fever Cases	Incidence	PRE Cases	Deaths
0-14	4	0.4	2	0.2	0	
15-29	16	1.6	19	1.9	9	
30-44	16	1.7	38	4.0	10	
45-59	55	6.9	67	8.4	18	3
60-74	41	9.0	39	8.6	6	7
75+	28	12.0	26	11.1	3	11
Undetermined						
<b>Total</b>	<b>160</b>	<b>3.6</b>	<b>191</b>	<b>4.3</b>	<b>46</b>	<b>21</b>

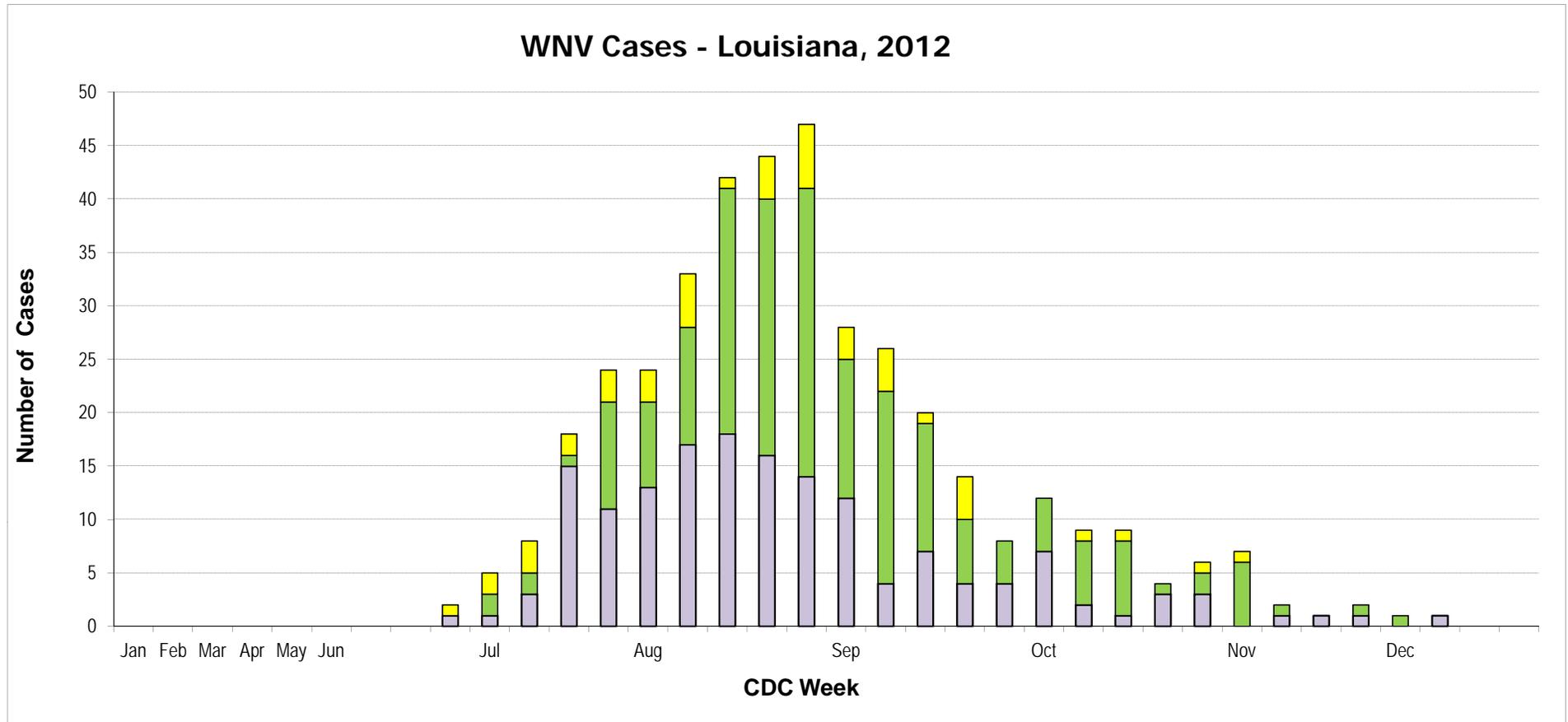
Age Group	Neuroinvasive Disease Cases by Gender			
	Male	M Incidence	Female	F Incidence
0-14	4	0.8	0	0.0
15-29	9	1.8	7	1.4
30-44	9	1.8	7	1.4
45-59	33	8.6	22	5.4
60-74	29	14.2	12	4.8
75+	17	20.4	11	7.3
Undetermined				
<b>Total</b>	<b>101</b>	<b>4.7</b>	<b>59</b>	<b>2.6</b>







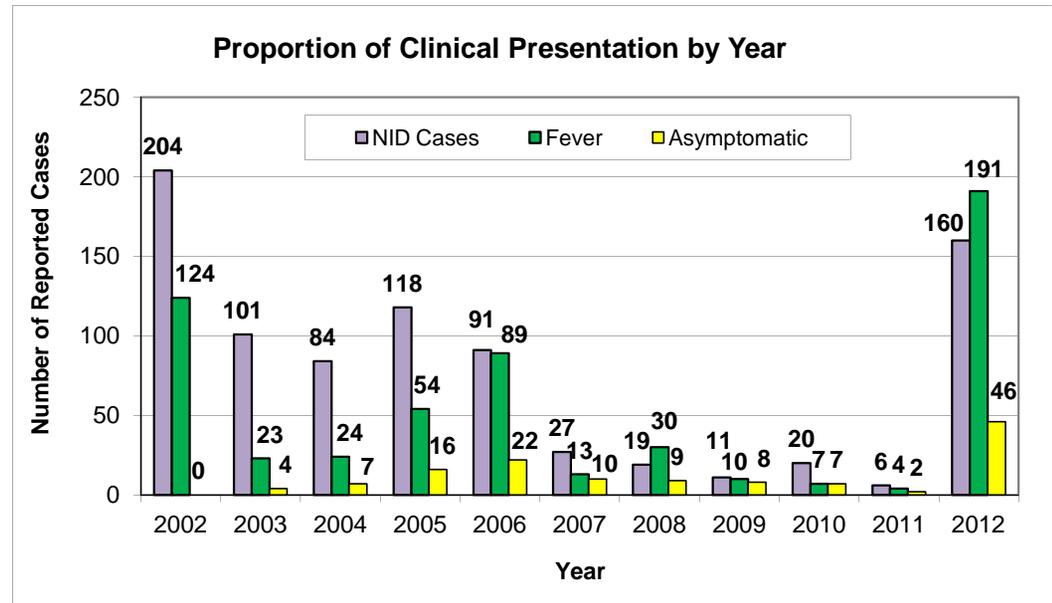
CDC Week		1-5	6-9	10-13	14-17	18-21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Region	Parish	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec																							



R e g	Parish	Reported Infections 2012				Previously Reported NID Cases										
		Incidence	NID	Fever	PRE	02	03	04	05	06	07	08	09	10	11	
1	Jefferson	2.9	13	5	2	24	3	1	6	8	2	2	0	0	0	
1	Orleans	2.3	11	6	1	10	2	1	6	12	2	2	0	0	0	
1	Plaquemines	0.0			1	0	0	0	0	0	0	0	0	0	0	
1	St Bernard	1.5	1		1	0	0	0	1	0	0	0	0	0	0	
2	Ascension	3.9	3	6	2	6	2	1	3	10	0	0	0	2	0	
2	East Baton Rouge	4.1	17	25	2	37	1	22	17	6	0	0	2	9	0	
2	East Feliciana	9.4	2	6		2	1	1	0	0	0	0	0	0	0	
2	Iberville	0.0		8	1	2	0	0	2	0	0	0	0	0	0	
2	Pointe Coupee	0.0		4	3	6	0	0	0	0	0	0	0	0	0	
2	West Baton Rouge	0.0		6	3	2	0	1	2	1	0	0	0	0	0	
2	West Feliciana	6.6	1	1		0	0	0	0	0	0	1	0	0	0	
3	Assumption	0.0		1		0	1	0	0	1	0	0	0	0	0	
3	Lafourche	1.1	1	2	2	0	2	0	1	1	0	0	0	0	0	
3	St Charles	2.1	1			0	0	0	0	0	0	0	0	0	0	
3	St James	0.0				2	0	0	0	0	0	0	0	0	0	
3	St John	0.0				2	0	0	0	0	1	0	0	0	0	
3	St Mary	0.0				0	1	0	0	0	0	0	0	0	0	
3	Terrebonne	1.0	1	1	1	0	3	0	0	0	0	0	0	0	0	
4	Acadia	0.0		1		0	0	0	1	0	0	0	0	0	0	
4	Evangeline	0.0				1	0	1	0	0	1	0	0	0	0	
4	Iberia	1.4	1	1	1	2	1	0	4	0	0	0	0	3	0	
4	Lafayette	1.0	2	1	1	4	0	1	1	1	1	0	0	0	0	
4	St Landry	0.0		1		1	0	3	0	0	0	0	0	0	0	
4	St Martin	2.1	1			0	0	0	0	0	0	0	0	0	0	
4	Vermillion	0.0				0	0	0	0	1	0	0	0	2	0	
5	Allen	3.9	1			0	0	0	0	0	0	0	1	0	0	
5	Beauregard	3.0	1	2		0	0	1	1	0	1	0	0	1	0	
5	Calcasieu	4.4	8	13	2	8	1	3	2	5	0	1	0	0	2	
5	Cameron	0.0		1		0	0	0	0	0	0	0	0	0	0	
5	Jefferson Davis	0.0		1		0	1	1	0	0	0	0	0	0	0	

R e g	Parish	Reported Infections 2012				Previously Reported NID Cases										
		Incidence	NID	Fever	PRE	02	03	04	05	06	07	08	09	10	11	
6	Avoyelles	2.4	1	1		2	0	0	0	1	1	1	0	0	0	
6	Catahoula	0.0		1	1	0	1	0	0	1	0	0	0	0	0	
6	Concordia	9.9	2	3	1	1	0	0	0	1	1	0	0	0	0	
6	Grant	16.0	3		1	1	0	0	0	0	0	0	0	0	0	
6	Rapides	8.7	11	7	2	14	2	8	7	7	2	0	1	0	0	
6	Lasalle	0.0		1		0	0	0	0	0	0	0	0	0	0	
6	Vernon	1.9	1		2	0	0	0	0	1	0	0	0	0	1	
6	Winn	5.9	1	2		1	0	0	1	0	0	0	0	0	0	
7	Bienville	6.3	1			0	0	0	0	0	0	0	0	0	0	
7	Bossier	6.1	6	12	2	3	8	9	6	2	0	0	0	0	0	
7	Caddo	7.5	19	27	6	5	38	8	16	3	7	3	1	0	0	
7	Claiborne	0.0				0	1	0	0	0	0	0	0	0	0	
7	DeSoto	11.8	3	3		1	1	0	0	0	0	0	0	0	0	
7	Natchitoches	5.1	2	1		0	1	0	2	0	0	0	0	0	0	
7	Red River	0.0				1	0	0	0	0	0	0	0	1	0	
7	Sabine	0.0				0	0	0	0	0	1	0	0	0	0	
7	Webster	9.6	4	5		0	0	1	0	1	0	0	0	0	0	
8	Caldwell	9.5	1			0	0	1	0	0	0	0	0	0	0	
8	East Carroll	0.0			1	0	0	0	0	0	0	0	0	0	0	
8	Franklin	4.7	1	1		0	0	1	1	0	0	0	0	0	0	
8	Jackson	0.0				0	1	0	0	0	0	0	0	0	0	
8	Lincoln	2.4	1	1	1	0	2	0	1	0	0	1	0	0	0	
8	Madison	7.3	1			0	0	1	0	0	0	0	0	0	0	
8	Morehouse	3.2	1	1		0	2	2	1	0	1	0	0	0	0	
8	Ouachita	2.0	3	6		6	2	5	15	3	1	1	0	0	0	
8	Richland	4.8	1	1	1	2	1	1	0	0	0	0	0	0	0	
8	Tensas	0.0				0	0	0	0	0	0	0	0	0	0	
8	Union	4.4	1			1	1	1	0	0	0	0	0	0	0	
8	West Carroll	0.0				0	2	2	0	0	1	0	0	0	0	
9	Livingston	6.5	6	8		12	5	6	11	1	1	1	0	1	0	
9	St Helena	19.0	2			0	2	0	2	0	0	0	0	0	0	
9	St Tammany	5.2	10	12	2	27	4	0	3	14	0	3	4	1	1	
9	Tangipahoa	11.9	12	4	3	12	6	1	2	6	1	3	1	0	1	
9	Washington	2.3	1	2		6	2	0	3	4	2	0	1	0	1	
	<b>Total</b>	<b>5.6</b>	<b>160</b>	<b>191</b>	<b>46</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>	

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

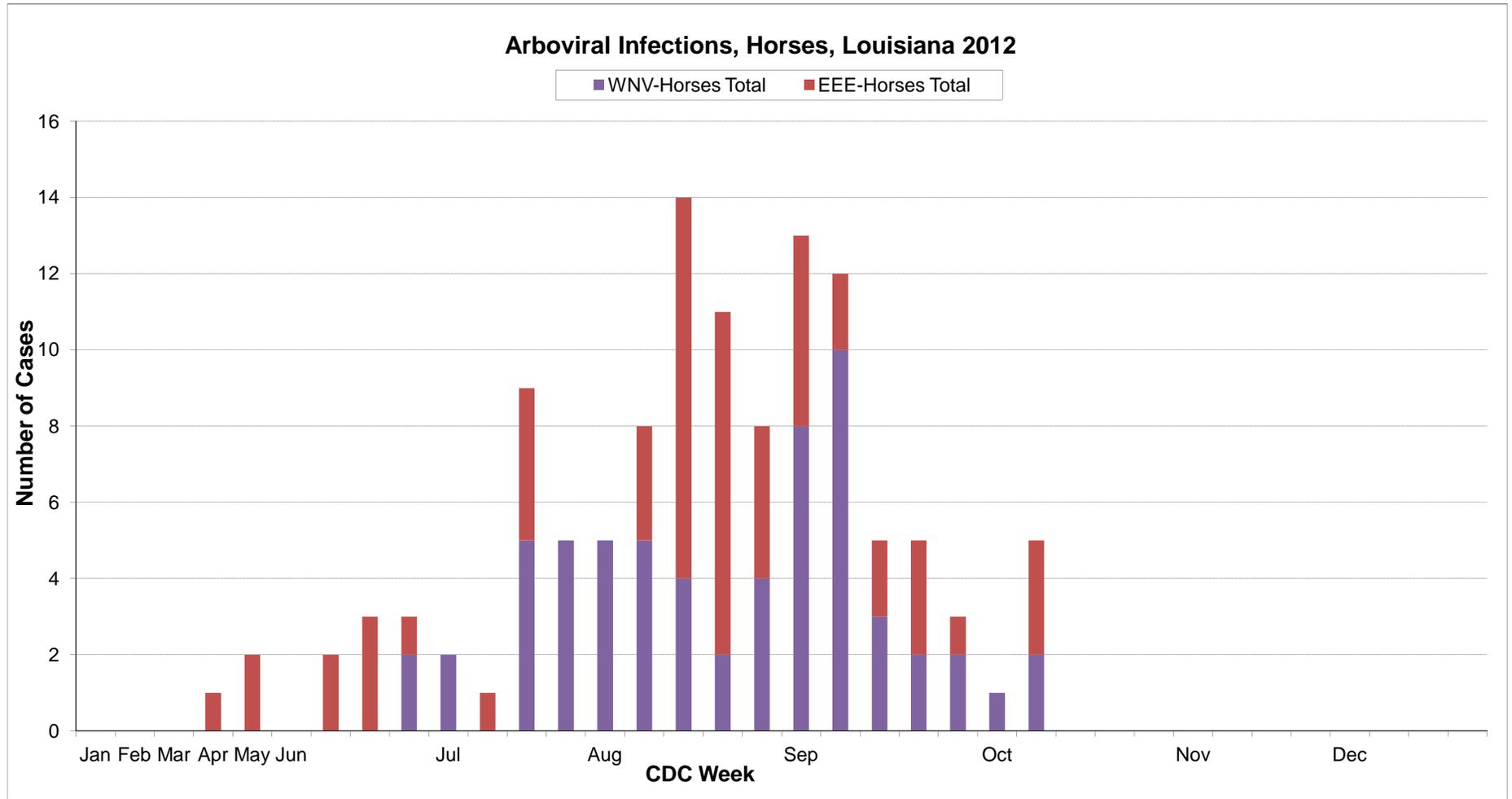


Total Human WNV Clinical Presentation by Year												
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
<b>NID Cases</b>	204	101	84	118	91	27	19	11	20	6	160	841
<b>Fever</b>	124	23	24	54	89	13	30	10	7	4	191	569
<b>Asymptomatic</b>	NA	4	7	16	22	10	9	8	7	2	46	131
Proportion of NID/F	0.62	0.81	0.78	0.69	0.51	0.68	0.39	0.52	0.74	0.60	0.46	
Deaths	24	7	7	11	9	2	1	0	0	0	21	

# Arboviral Horses

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																											
	Undetermined	62							2	2	5	5	5	5	4	2	4	8	10	3	2	2	1	2																	
	<b>WNV-Horses Total</b>	<b>75</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>10</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>																				
	Undetermined	56				1	2	2	3	1	1	4	3	10	9	4	5	2	2	3	1	3																			
	<b>EEE-Horses Total</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>10</b>	<b>9</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>													

**Limitations:** The Louisiana Department of Agriculture and Forestry (LDAF) reports neuroinvasive disease in equines. The parish where each horse resides at time of infection is listed as Undetermined until confirmed by LDAF. DHH OPH uses this data for epidemiologic purposes.



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