Louisiana Arbovirus Surveillance Summary 2010

CDC Week 01-52 From: 01/01/2010-12/31/2010

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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 one percent of the WN-Fever and asymtomatic 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, 34 human WNV infections have been identified There are 7 asymptomatic cases, 6 identified through screening of blood donors. Of the 27 WNV cases with symptoms, 20 are classified as WNV neuroinvasive disease (NID) cases, the most severe presentation of the disease, and 7 are classified as WNV fever cases, the WNV-related mild, febrile illness. There has been 0 WNV fatalities to date in Louisiana.

There have been 0 cases of California group Encephalitis, most likely LaCrosse Encephalitis, 0 cases of Eastern Equine Encephalitis and 0 cases of St. Louis Encephalitis reported. These infections are not considered outbreaks since sporadic cases of these arboviruses often occur from year to year in the state.

Horses: There has been 5 confirmed cases of equine WNV and 16 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 tramsmission.

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. Persons who encounter dead birds in Louisiana can contact their local parish health unit or

Mosquito Pools: This is the most effective surveillance system to monitor arboviral transmission. Arboviruses are detected through nucleic acid testing of pools of fifty 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 22,000 mosquito pools submitted for testing. 31 SLE positive pools and 570 WNV positive pools have been found in over 28 parishes.

West Nile Virus (WNV) Clinical Presentation		
Neuroinvasive Disease	NID	20
Fever	F	7
Asymptomatic Present Infections	PRE	7
Positive Blood Donors	PVD	6

Eastern Equine Encephalitis (EEE) Cases = 0			
CDC Week Onset	Parish	Age	Gender

LaCrosse Encephalitis (CAL) Cases = 0			
CDC Week Onset	Parish	Age	Gender

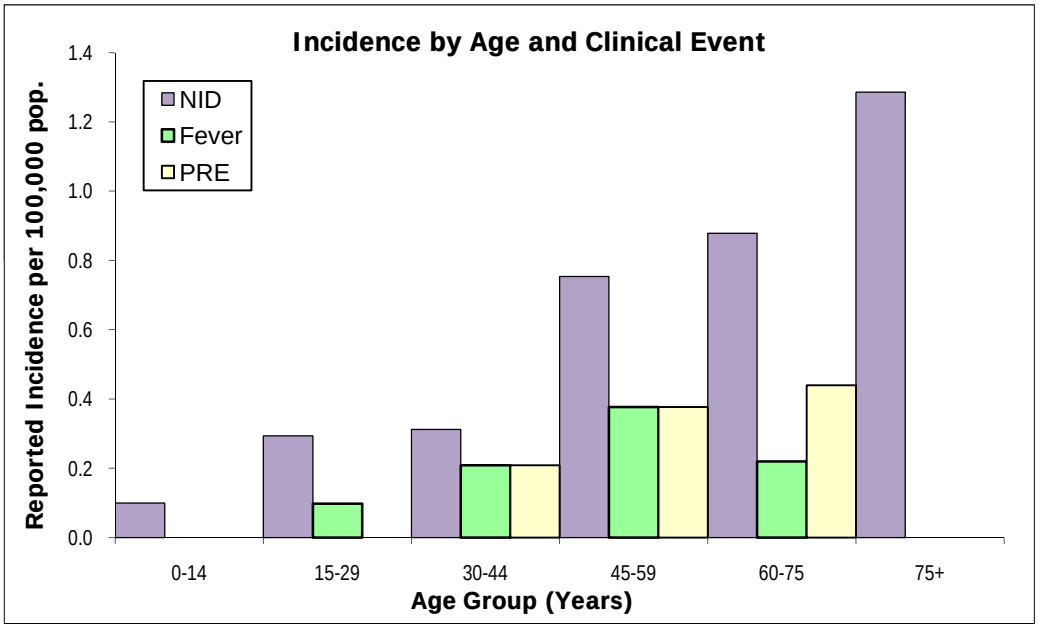
St. Louis Encephalits and Fever (SLE) Cases = 0			
CDC Week Onset	Parish	Age	Gender

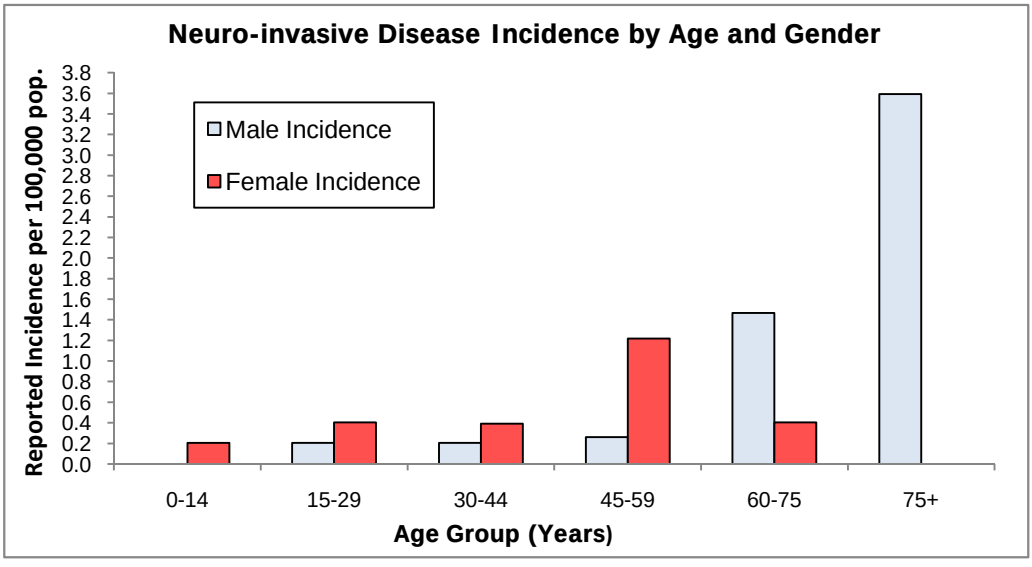
Limitations: Human data have very limited usefulness for mosquito control purposes. Only 2% of all WN infections are reported (because most WN infections are asymptomatic or WN fever cases do not get medical care, they never get diagnosed nor are reported). The reporting of those cases is delayed. From 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) then it takes several days from onset of disease to seeking medical care and 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 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 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.

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	0	
15-29	3	0.3	1	0.1	0	
30-44	3	0.3	2	0.2	2	
45-59	6	0.8	3	0.4	3	
60-75	4	0.9	1	0.2	2	0
75+	3	1.3	0	0.0	0	0
Undetermined						
Total	20	0.4	7	0.2	7	0

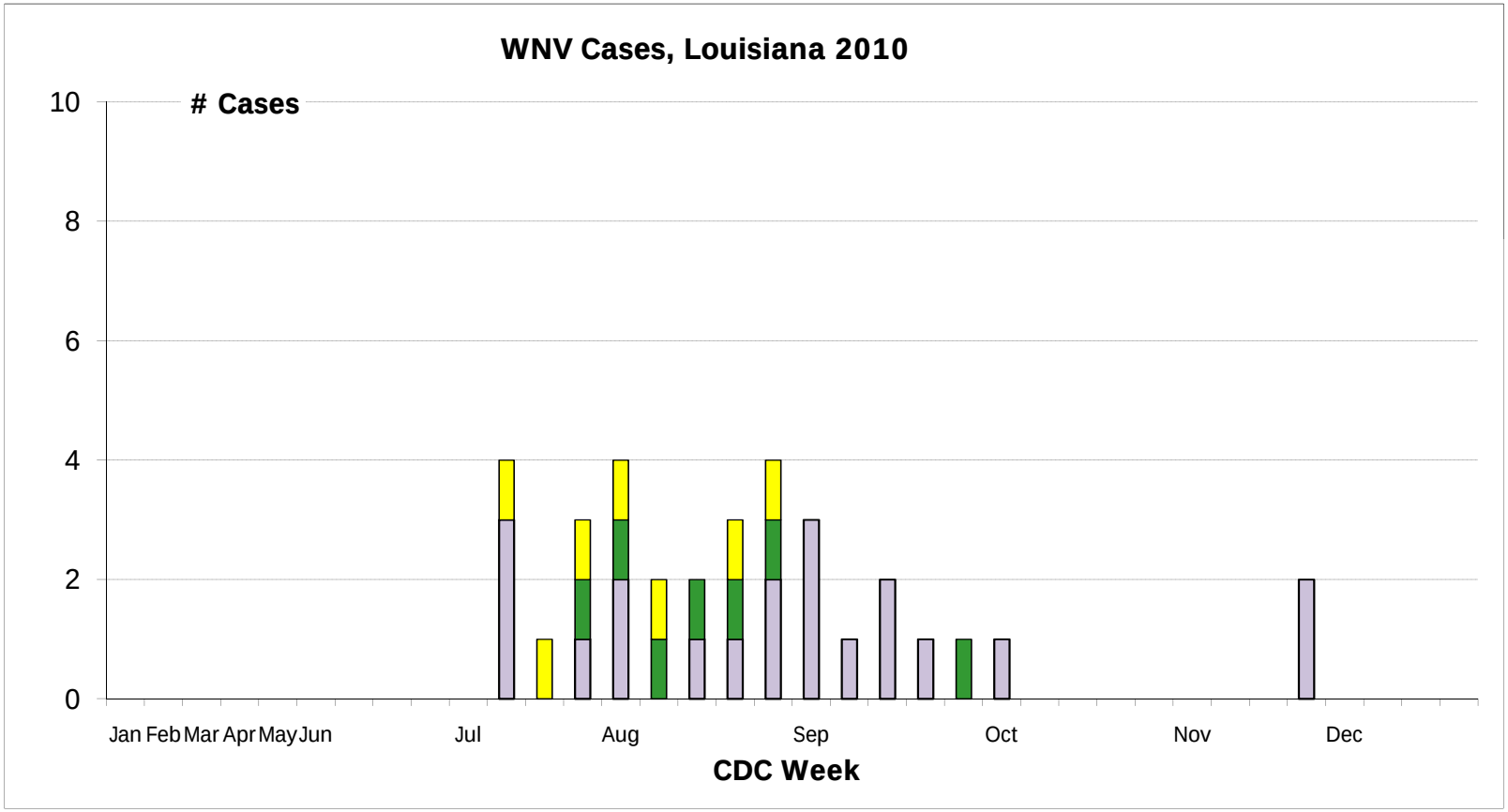
Age Group	Neuroinvasive Disease Cases by Gender			
	Male	M Incidence	Female	F Incidence
0-14	0	0.0	1	0.2
15-29	1	0.2	2	0.4
30-44	1	0.2	2	0.4
45-59	1	0.3	5	1.2
60-75	3	1.5	1	0.4
75+	3	3.6	0	0.0
Undetermined				
Total	9	0.4	11	0.5





WNV-NID 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				
2	Ascension	2											1							1																		
2	East Baton Rouge	9											1		1	2		1		2	2																	
4	Iberia	3																					2			1												
4	Vermilion	2																						1										1				
5	Beauregard	1																																1				
7	Red River	1											1																									
9	Livingston	1																			1																	
9	St Tammany	1																				1																
	WNV-NID Total	20	0	0	0	0	0	0	0	0	0	0	3	0	1	2	0	1	1	2	3	1	2	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0
2	Ascension	5														1	1	1	1	1																		
2	East Baton Rouge	1													1																							
2	West Baton Rouge	1																							1													
	WNV-F Total	7	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Ascension	3												1		1			1																		
2	East Baton Rouge	4											1		1		1			1																		
	WNV-PRE Total	7	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



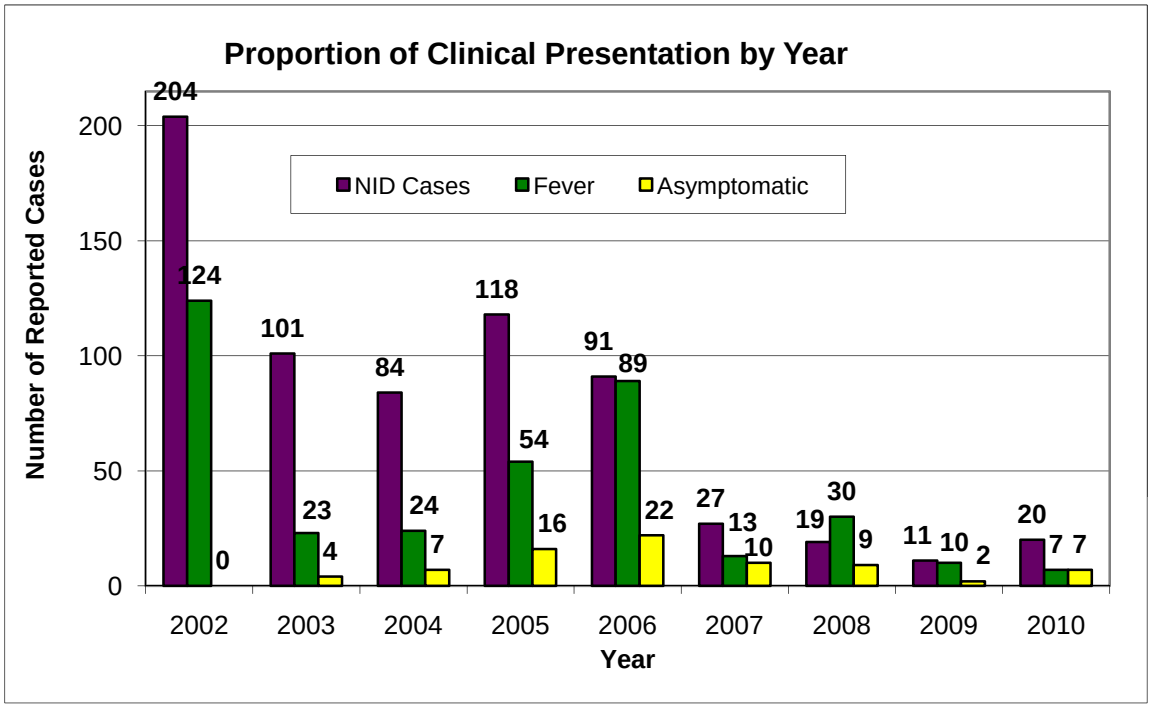
NID by Parish 2002-Present

Reg	Parish	Reported Infections 2010				Previously Reported NID Cases							
		Incidence	NID	Fever	PRE	2002	2003	2004	2005	2006	2007	2008	2009
1	Jefferson	0.0				24	3	1	6	8	2	2	0
1	Orleans	0.0				10	2	1	6	12	2	2	0
1	Plaquemines	0.0				0	0	0	0	0	0	0	0
1	St Bernard	0.0				0	0	0	1	0	0	0	0
2	Ascension	2.6	2	5	3	6	2	1	3	10	0	0	0
2	East Baton Rouge	2.2	9	1	4	37	1	22	17	6	0	0	2
2	East Feliciana	0.0				2	1	1	0	0	0	0	0
2	Iberville	0.0				2	0	0	2	0	0	0	0
2	Pointe Coupee	0.0				6	0	0	2	0	0	0	0
2	West Baton Rouge	0.0		1		2	0	1	0	1	0	0	0
2	West Feliciana	0.0				0	0	0	0	0	0	1	0
3	Assumption	0.0				0	1	0	0	1	0	0	0
3	Lafourche	0.0				0	2	0	1	1	0	0	0
3	St Charles	0.0				0	0	0	0	0	0	0	0
3	St James	0.0				2	0	0	0	0	0	0	0
3	St John	0.0				2	0	0	0	0	1	0	0
3	St Mary	0.0				0	1	0	0	0	0	0	0
3	Terrebonne	0.0				0	3	0	0	0	0	0	0
4	Acadia	0.0				0	0	0	1	0	0	0	0
4	Evangeline	0.0				1	0	1	0	0	1	0	0
4	Iberia	4.1	3			2	1	0	4	0	0	0	0
4	Lafayette	0.0				4	0	1	1	1	1	0	0
4	St Landry	0.0				1	0	3	0	0	0	0	0
4	St Martin	0.0				0	0	0	0	0	0	0	0
4	Vermillion	3.7	2			0	0	0	0	1	0	0	0
5	Allen	0.0				0	0	0	0	0	0	0	1
5	Beauregard	3.0	1			0	0	1	1	0	1	0	0
5	Calcasieu	0.0				8	1	3	2	5	0	1	0
5	Cameron	0.0				0	1	0	0	0	0	0	0
5	Jefferson Davis	0.0				0	0	1	0	0	0	0	0

Reg	Parish	Reported Infections 2010				Previously Reported NID Cases							
		Incidence	NID	Fever	PRE	2002	2003	2004	2005	2006	2007	2008	2009
6	Avoyelles	0.0				2	0	0	0	1	1	1	0
6	Catahoula	0.0				0	1	0	0	1	0	0	0
6	Concordia	0.0				1	0	0	0	1	1	0	0
6	Grant	0.0				1	0	0	0	0	0	0	0
6	Rapides	0.0				14	2	8	7	7	2	0	1
6	Lasalle	0.0				0	0	0	0	0	0	0	0
6	Vernon	0.0				0	0	0	0	1	0	0	0
6	Winn	0.0				1	0	0	1	0	0	0	0
7	Bienville	0.0				0	0	0	0	0	0	0	0
7	Bossier	0.0				3	8	9	6	2	0	0	0
7	Caddo	0.0				5	38	8	16	3	7	3	1
7	Claiborne	0.0				0	1	0	0	0	0	0	0
7	DeSoto	0.0				0	1	0	0	0	0	0	0
7	Natchitoches	0.0				1	1	0	2	0	0	0	0
7	Red River	10.4	1			0	0	0	0	0	0	0	0
7	Sabine	0.0				1	0	0	0	0	1	0	0
7	Webster	0.0				0	0	1	0	1	0	0	0
8	Caldwell	0.0				0	0	1	0	0	0	0	0
8	East Carroll	0.0				0	0	0	0	0	0	0	0
8	Franklin	0.0				0	0	1	1	0	0	0	0
8	Jackson	0.0				0	1	0	0	0	0	0	0
8	Lincoln	0.0				0	2	0	1	0	0	1	0
8	Madison	0.0				0	0	1	0	0	0	0	0
8	Morehouse	0.0				0	2	2	1	0	1	0	0
8	Ouachita	0.0				6	2	5	15	3	1	1	0
8	Richland	0.0				2	1	1	0	0	0	0	0
8	Tensas	0.0				0	0	0	0	0	0	0	0
8	Union	0.0				1	1	1	0	0	0	0	0
8	West Carroll	0.0				0	2	2	0	0	1	0	0
9	Livingston	1.1	1			12	5	6	11	1	1	1	0
9	St Helena	0.0				0	2	0	2	0	0	0	0
9	St Tammany	0.5	1			27	4	0	3	14	0	3	4
9	Tangipahoa	0.0				12	6	1	2	6	1	3	1
9	Washington	0.0				6	2	0	3	4	2	0	1
	Total	0.7	20	7	7	204	101	84	118	91	27	19	11

Human Summary 2002-Present

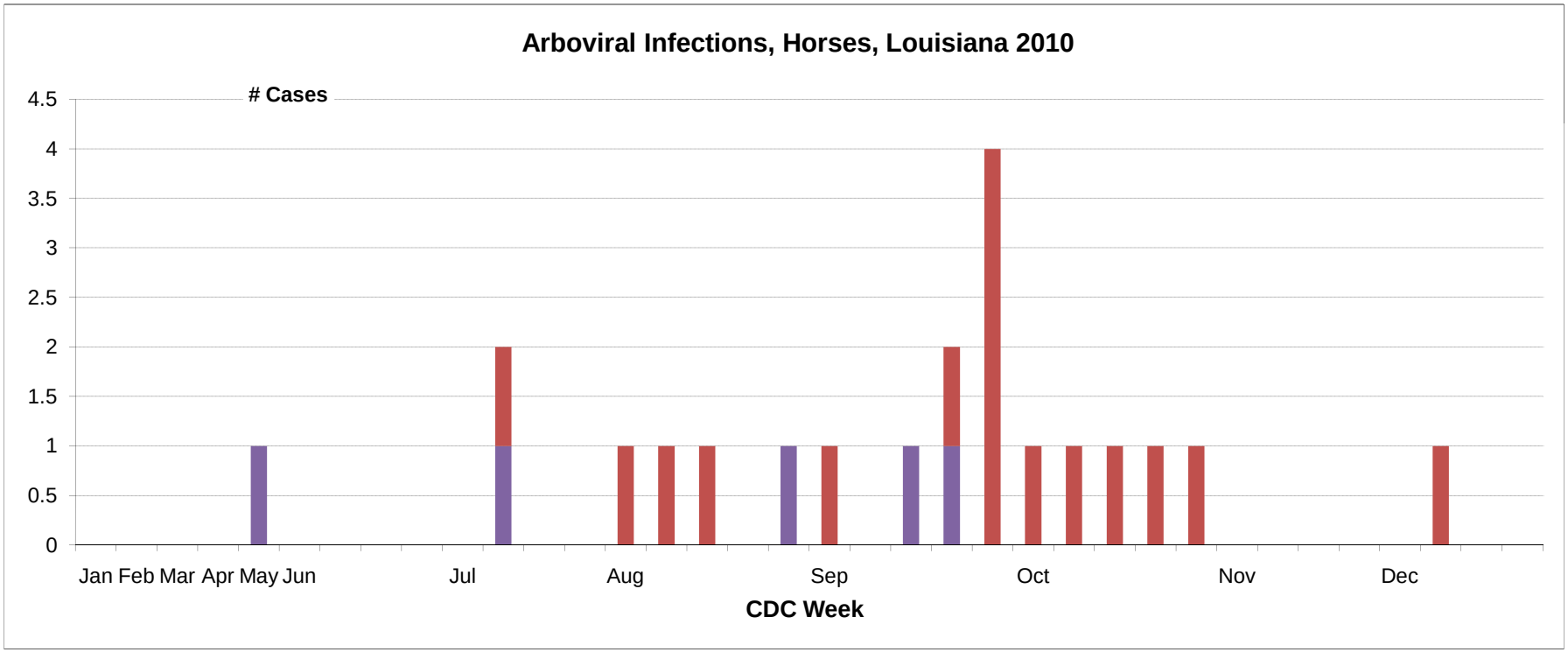
WNV-NID Cases by CDC Week by Year										
	Week	2002	2003	2004	2005	2006	2007	2008	2009	2010
Jan	1									
	3									
	7									
March	10									
	13									
	17									
May	19									
	20	0	0	0	0	0	0	0	0	0
	21	0	0	0	0	0	0	0	0	0
June	22	0	0	0	0	0	0	0	0	0
	23	0	0	0	0	0	0	0	0	0
	24	2	0	0	0	0	0	0	0	0
	25	2	2	0	0	0	0	0	1	0
July	26	11	0	0	0	1	0	0	1	0
	27	6	3	3	4	1	0	0	2	3
	28	9	5	2	5	4	0	0	0	0
	29	23	5	2	13	5	0	0	1	1
August	30	23	8	8	8	6	0	2	1	2
	31	21	10	5	21	7	1	1	0	0
	32	24	7	15	11	14	3	2	1	1
	33	21	8	7	9	13	2	1	2	1
	34	14	6	3	8	7	2	3	1	2
September	35	8	6	5	6	6	5	3	0	3
	36	13	4	5	8	9	3	2	0	1
	37	8	9	3	9	6	3	0	1	2
	38	6	4	4	2	3	1	0	0	1
	39	3	2	5	4	4	1	0	0	0
October	40	3	4	5	4	1	3	3	0	1
	41	3	2	4	3	1	0	0	0	0
	42	3	1	2	3	1	0	0	0	0
	43	0	2	0	0	0	3	0	0	0
	44	0	4	0	0	1	0	0	0	0
November	45	0	2	2	0	0	0	1	0	0
	46	0	1	1	0	0	0	0	0	0
	47	1	1	2	0	1	0	1	0	0
	48	0	2	1	0	0	0	0	0	2
December	49	0	3	0	0	0	0	0	0	0
	50	0	0	0	0	0	0	0	0	0
	51	0	0	0	0	0	0	0	0	0
	52	0	0	0	0	0	0	0	0	0
NID Total		204	101	84	118	91	27	19	11	20



Total Human WNV Clinical Presentation by Year									
	2002	2003	2004	2005	2006	2007	2008	2009	2010
NID Cases	204	101	84	118	91	27	19	11	20
Fever	124	23	24	54	89	13	30	10	7
Asymptomatic	NA	4	7	16	22	10	9	2	7
Proportion of NID/F	0.62	0.81	0.78	0.69	0.51	0.68	0.39	0.52	0.74

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			
3	St James	1											1																								
3	LaFourche	1																						1													
4	Lafayette	1																					1														
5	Calcasieu	1																		1																	
7	Caddo	1					1																														
	Undetermined	0																																			
	WNV-Horses Total	5	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Jefferson	1																							1												
3	Assumption	1															1																				
3	LaFourche	2																						1	1												
3	St. James	2											1												1												
3	St. Mary	2														1													1								
3	Terrebonne	2																								1		1									
4	Acadia	1																												1							
4	Iberia	0																																			
4	Vermilion	2																							1		1										
7	Sabine	1																1																			
8	Jackson	1																			1																
9	Washington	1																																		1		
	Undetermined	0																																			
	EEE-Horses Total	16	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	1	0	0	1	4	1	1	1	1	1	0	0	0	0	0	1	0	0



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