Louisiana Morbidity Report

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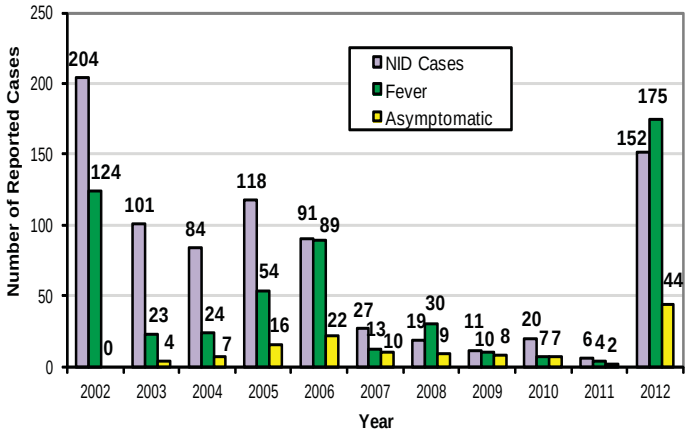
Why the Sudden Increase of West Nile Infections in Louisiana?

How High Was the West Nile Epidemic Level in Louisiana?

The number of West Nile (WN) Neuro-Invasive human cases reached a very high level in 2012, only second to that observed in 2002, when the first WN infection became endemic in Louisiana (Figure).

Figure: Clinical Presentation of West Nile by Year – Louisiana, 2002-2012



The level of WN endemicity should only be evaluated by the number of new Neuro-Invasive cases in relation to the total population at risk (incidence of new cases per 100,000 population). The total human cases of WN infection, number of WN fever cases or asymptomatic cases (blood donor screening) are poor indicators because they depend too much on diagnostic laboratory availability. On the other hand, cases of WN-NID are severe illnesses and almost always end up in hospitalizations, get diagnosed and are reported.

Contents

Understanding the Increase - A Review of WN Transmission:

The WN virus (WNV) natural hosts are birds. The virus is usually transmitted from bird-to-bird by Culex mosquitoes (*Culex quinquefasciatus* a.k.a. 'quink' or Southern House mosquito). Quinks prefer to feed on birds, but may also feed on humans and other mammals (dogs, cats, squirrels etc.). The duration of viremia (viremic phase) in the bird depends on the species. Female mosquitos feed on bird blood to mature their eggs. During a meal on a viremic bird, the female mosquito may ingest some WN viruses. The virus then multiplies in the stomach cells, and within 10 to 14 days reaches 100,000 times the viral load of the initial meal. Then, the viruses migrate to the mouth parts of the mosquito; this period lasts from seven to 14 days, depending on the outside temperature. As the ambient temperature increases, the interval between feedings and the maturation period in the mosquito's stomach shortens - thus, warm temperatures speed up and increase transmission. The higher the ambient temperature, the more intense the WN transmission.

How the Weather Influences WN Transmission

The weather-related factors that most likely influence the prevalence of WNV in any given warm season are: the previous winter's temperature, the current (outbreak season) temperature and rainfall levels. There are four phases of WNV transmission:

The **Maintenance Phase** (January-March) is when arboviruses survive the winter. Culex mosquitoes spend the winter hibernating in protected structures such as root cellars, bank barns, caves, abandoned tunnels and other subterranean locations. Some overwintering adult mosquitoes do test positive for WNV.

The mild temperatures during the 2011 to 2012 winter allowed many adult mosquitoes from the 2011 season to survive into 2012, boosting the total number of Culex mosquitoes.

The **Amplification Phase** (April-June) corresponds with a major portion of the avian nesting season. During this period, (arboviral amplification) mosquitoes and non-immune nestling birds come into contact and initiate the first rounds of avian and mosquito infections. Of the four phases, the Amplification Phase is the most important in determining the risk of human infection and the intensity of an arboviral epidemic later in the year. Full-blown arboviral epidemics require large numbers of infected mosquitoes. WN outbreaks have typically reported mosquito infection rates ranging from 1:1,000 to 1:200. To realize mosquito infection rates of this magnitude, extremely efficient viral amplification must occur between local avian populations and vector mosquitoes. In order to have efficient amplification, a large population of non-immune

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Heat Syndromic Surveillance Hospital Emergency Departments Louisiana, 2012

Jenna Iberg Johnson, M.S.P.H.; Christine Scott-Waldron, M.S.P.H.

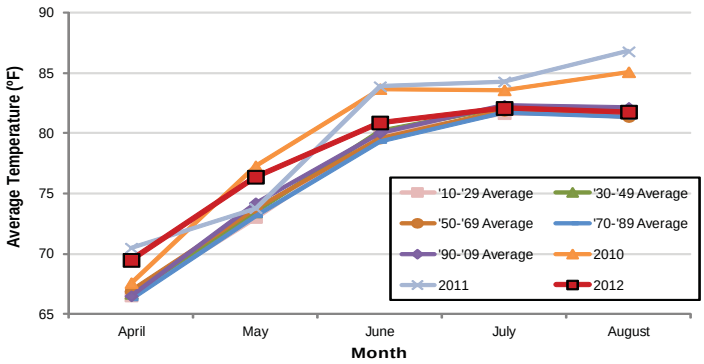
Introduction:

Infectious Disease Epidemiology (IDEpi) conducted enhanced syndromic surveillance in response to a July 2012 report of an increase in emergency department (ED) visits related to extreme outdoor heat. Weekly summaries from April 22 to September 30, 2012 of ED chief complaint data were extracted from Louisiana Early Event Detection System (LEEDS), IDEpi's syndromic surveillance system, to monitor visits indicative of symptoms related to heat (heat exhaustion, overheating, etc.) and dehydration.

Temperatures in Louisiana:

Based on data from the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center, 20-year averages of monthly temperatures were calculated for the years 1910 to 1929, 1930 to 1949, 1950 to 1969, 1970 to 1990, and 1990 to 2009, and compared with the years 2010, 2011 and 2012 monthly averages (Figure 1).

Figure 1: Historical Monthly Average Temperatures - Louisiana, April-August, 1910-2012



Temperatures in April and May of 2012 were above historical 20-year average temperatures. However, in June, July and August of 2012, temperatures were very similar to historical 20-year average temperatures, but were lower than average temperatures in the

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birds must encounter infective vectors. When this happens in the presence of increasing vector populations, explosive amplification will occur.

During this phase, warmer temperatures allow mosquitoes to develop faster, and the viruses they carry replicate faster. West Nile begins to develop inside its hosts once the temperature reaches about 58°F, and the rate of development then doubles for each incremental 12°F increase in temperature.

The January-October 2012 period was the warmest first 10 months of any year on record for the contiguous United States. The national temperature of 58.4°F was 3.4°F above the 20th century average, and 1.1°F above the previous record warm January-October 2000. During the 10-month period, 21 states were record warm and an additional 25 states had year-to-date temperatures among their 10 warmest.

When the **Early Epidemic Phase** (July-September) starts, nesting is over, and birds are spreading out. This is the hot, wet, humid period that includes the worst of the Atlantic hurricane season. During this phase, arboviral transmission increases dramatically, and human cases appear with mosquitos feeding not only on birds but also on humans and other mammals. The first cases of human WN infection usually start in early July, peak at the end of August and gradually decrease until end of November. Alternate periods of rain and dry weather boosts the numbers of Culex mosquitoes. Quinks like to breed in pools of water rich in plant and decaying organic materials. Underground storm drains are generally a great breeding habitat for the Southern House mosquitoes. Large rainfall flushes away mosquito larvae, inhibiting reproduction but, during a following dry period, the leftover pools of water in the stagnant storm drains lead to a big boost in mosquito numbers.

Hurricanes bring huge rainfalls that can wash away breeding sites and adult mosquitoes, particularly in areas where flooding overwhelms mosquito hiding sites. High winds also displace mosquitoes and the bird populations. Immediately following a hurricane, there is an upsurge of "flood" mosquitoes, which are not efficient vectors of WNV. When flooded areas dry up, breeding sites increase. With the return of mosquitoes and birds, transmission may resume, but often at lower intensity. Depending on the area, the configuration of the land and breeding sites, and timing in the year, hurricanes may end up contributing to a renewal of high transmission; however, this is less frequent.

During the **Late Epidemic Phase** (October-December) Louisiana found the number of new human cases gradually declining as the epidemic burned itself out. The last cases were recorded in December.

For more information, please go to DHH Infectious Disease Epidemiology's WNV webpage http://new.dhh.louisiana.gov/index.cfm/page/539 or call (504) 568-8290.

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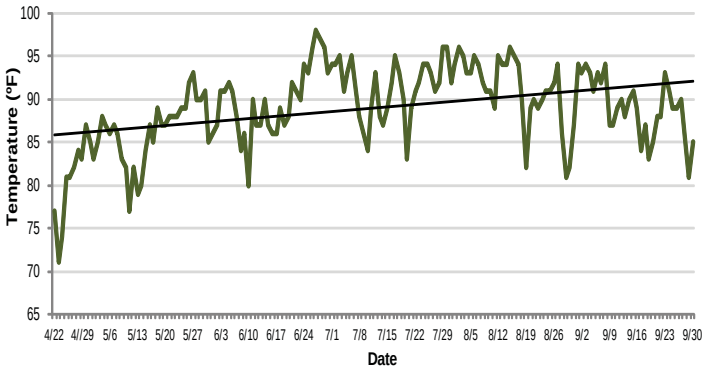
same months of 2010 and 2011.

Daily temperatures increased over the period in New Orleans, Louisiana from April 22 to September 30, 2012, with the lowest temperature of 71ºF occurring on April 23, and the two highest temperatures of 98ºF and 97ºF occurring on June 27 and June 28, respectively. The average temperature over the period was 89ºF (Figure 2).

Figure 2: Daily Temperatures - New Orleans, Louisiana, April 22-September 29, 2012



Data representing statewide daily temperatures were not available.

Results:

Data were collected from the EDs of 21 hospitals throughout the state and analyzed weekly over a selected period (beginning 4/22/12 through the week beginning 9/23/12). Heat-related (0.05% to 0.41%) and dehydration-related visits (0.28% to 0.53%) accounted for small percentages of ED visits over this period. Weekly average temperatures were calculated from the daily temperatures in New Orleans for the period. The highest weekly average temperature of 95.3ºF occurred the week of June 24, 2012, and the lowest weekly average temperature of 78.6ºF occurred the week of April 22, 2012 (Table).

Table: Weekly Summaries of ED Visits related to Heat, Dehydration and Average Temperatures - Louisiana, April 22 – September 30, 2012

CDC Week 2012 Beginning	No. Hospitals	Total No. ED Visits	No. of ED Visits Associated With		Percent of Total ED Visits Associated		Weekly Avg. Temp. (˚F)
			Heat	Dehydration	Heat	Dehydration	
Apr. 22	17	13877	9	39	0.06%	0.28%	78.6
Apr. 29	17	14161	13	43	0.09%	0.30%	85.4
May 6	17	13759	9	49	0.07%	0.36%	83.3
May 13	17	14331	10	52	0.07%	0.36%	84.4
May 20	17	14628	13	45	0.09%	0.31%	88.7
May 27	17	14144	16	57	0.11%	0.40%	88.9
June 3	17	14035	15	43	0.11%	0.31%	89.0
June 10	17	13847	17	52	0.12%	0.38%	86.7
June 17	17	14145	12	46	0.08%	0.33%	89.0
June 24	17	14056	57	65	0.41%	0.46%	95.3
July 1	17	13462	18	62	0.13%	0.46%	93.3
July 8	18	14353	13	44	0.09%	0.31%	87.9
July 15	21	16572	27	56	0.16%	0.34%	90.1
July 22	21	16686	24	55	0.14%	0.33%	92.4
July 29	20	15844	43	84	0.27%	0.53%	94.6
Aug. 5	20	15464	22	52	0.14%	0.34%	92.1
Aug. 12	20	15900	26	64	0.16%	0.40%	94.0
Aug. 19	20	16627	14	47	0.08%	0.28%	88.9
Aug.26	20	15439	25	55	0.16%	0.36%	88.0
Sept. 2	20	17924	41	67	0.23%	0.37%	92.9
Sept. 9	20	16299	14	49	0.09%	0.30%	88.9
Sept. 16	20	16724	9	51	0.05%	0.30%	86.3
Sept. 23	20	16625	12	54	0.07%	0.32%	88.4

There was an increasing linear trend in total ED visits complaining of symptoms related to heat over the period (Cochrane-Armitage test for linear trend, p=0.006). Three peaks occurred among heat visits during the weeks of June 24, July 29 and September 2. The percentage of heat visits during the week of June 24 was sig-

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Methodological Improvements: Incorporation of Cell Phones and Raking Weights - BRFSS - Louisiana, 2011

Jude Haney, Ph.D., M.P.H.

The Behavioral Risk Factor Surveillance System (BRFSS) is a statewide health survey developed by the Centers for Disease Control and Prevention (CDC) and conducted by individual states and U.S. territories. Louisiana's BRFSS data is used in most local and state programs to monitor lifestyle and behaviors related to chronic health conditions, and leading causes of death across the state. In order to more accurately reflect the health of Louisiana's population and reduce possible bias, BRFSS introduced a new methodology in analyzing the data. The two survey improvements are the addition of cell phone interviews and a weighting method called iterative proportional fitting (or raking).

Data from the National Center for Health Statistics indicate that a large number of U.S. households using cell phones only are increasing; it is estimated that 26.8% of Louisiana adults currently live in cell-phone only households. Traditionally, the BRFSS only administered surveys to households who had landline telephones. Due to the large increase in use of cellular phones, BRFSS must incorporate cell phone users to accurately represent Louisiana's population.

Including cell phone data requires a different type of weighting methodology to accurately represent and adjust the sampling method. A method called post-stratification was used by BRFSS before the survey added cellular phone to the data set. This statistical method weighted BRFSS data by simultaneously adjusting survey respondent data to known proportions of age, race and ethnicity, gender, geographic region or other known characteristics of

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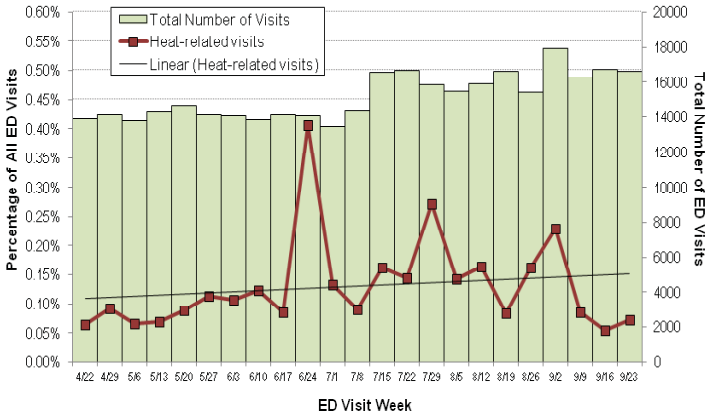
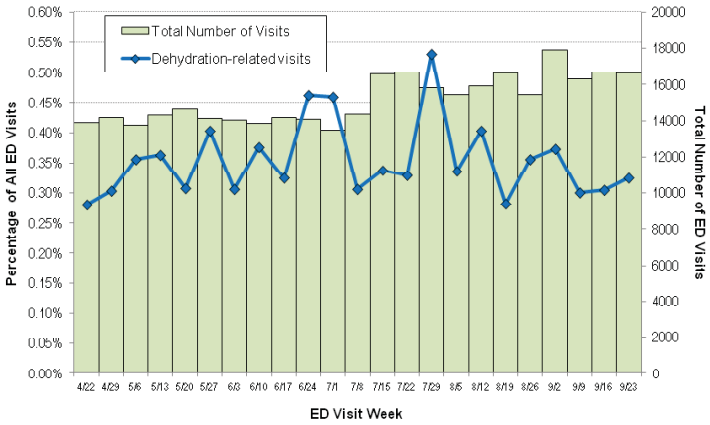
nificantly higher than all other weeks in the analysis period except for the other two peak weeks of July 29 and September 2 (Tukey's HSD test, $p<0.05$). The June 24 peak corresponds with the highest daily temperatures and the highest weekly average temperature of the period. The percentage of heat visits during the week of July 29 was significantly higher than less than half of the other weeks of the period (Tukey's HSD test, $p<0.05$), and corresponds with some of the highest daily temperatures and the second highest weekly average temperature of the period. The percentage of heat visits during the week of September 2 was significantly higher than only three other weeks at the beginning of the period (Tukey's HSD test, $p<0.05$) and corresponds with the fifth-highest weekly average temperature of the period (Figure 3).

Figure 3: Weekly Percentage of Total ED Visits Complaining of Symptoms Related to Heat – Louisiana, April 22-September 30, 2012



There was no significant linear trend for weekly percentages of total ED visits complaining of symptoms related to dehydration over the period (Cochrane-Armitage test for linear trend, p=0.794), and there were no significant peaks in dehydration-related visits (Tukey's HSD test) (Figure 4).

Figure 4: Weekly Percentage of Total ED Visits Complaining of Symptoms Related to Dehydration– Louisiana, April 22-September 30, 2012



Discussion:

IDEpi's analysis revealed a significant rise in percentage of ED visits related to heat during the week of June 24, 2012 that was significantly higher than the percentage of heat-related visits for almost all other weeks of the period and also saw the highest temperatures of the period. The analysis revealed no significant peaks in percentage of ED visits related to dehydration.

Monitoring this type of syndromic surveillance data provides situational awareness necessary to indicate if, and when, the utilization of public health resources and messaging may be beneficial in effforts to prevent additional increases in ED visits related to heat.

For references or more information, please contact Ms. Iberg Johnson at (504) 568-8312 or email to *jenna.iberg@la.gov*.

Announcements

The Pesticide Surveillance Program, Section of Environmental Epidemiolgy and Toxicology, recently released an educational guide titled '**Preventing and Getting Rid of Bed Bugs Safely**.'

Bed bug infestations are on the rise in Louisiana. This 14-page booklet provides important steps that can be taken to prevent bed bugs from infesting your home. *http://new.dhh.louisiana.gov/index.cfm/page/886*

Updates: Infectious Disease Epidemiology (IDEPI) Webpages
http://www.infectiousdisease.dhh.louisiana.gov

ANNUAL REPORTS: Botulism; Campylobacter; Hepatitis A; Multiple Sclerosis; Streptococcus Group B (GBS); Summary-Past Three Years
EPIDEMIOLOGY MANUAL: Botulism Summary: Brucellosis Summary; Cryptosporidiosis Public Info; Hepatitis B Summary; Hepatitis C Summary; Measles Summary; Rabies Summary; *Salmonella Typhi*/ *Paratyphi* Form (CDC)
HAI: Fall 2012 Newsletter; Workshop October 22, 2012 Recording
HEPATITIS: Help4Hep Support Line - Hepatitis C
INFLUENZA: Weekly Report
WEST NILE VIRUS: Weekly Report

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the state's population. A new modified weighting method called raking was implemented in 2011 as the official BRFSS weighting methodology. Raking adjusts the sample based on eight socio-demographic factors that allows for both telephone sources (landline or cellular telephone) in the weighting methodology of the BRFSS. The addition of cell phone users and raking will provide more representative estimates of Louisiana's adult population. The BRFSS sample has been weighted based on the following factors:

Post-Stratification (prior to 2011)	Raking (2011 and beyond)
Age	Educational level
Gender	Marital status
Race/ethnicity	Home owner or rental status
	Telephone source
	Age by Gender
	Gender by Race/ethnicity
	Age by Race/ethnicity
	Detailed Race/ethnicity

Impact of the New Methodology in Louisiana

Some of the differences in the Louisiana BRFSS will vary by survey question and variations in demographic variables used for raking and the proportion of respondents who use cellular telephones. For the 2011 data, only 8.7% of the population was surveyed via cell phone. The effect of adding cell phones accounts for the increasing number of households without a landline phone. Adding cell phone users to the sample and adjusting for more socio-demographic factors helps Louisiana better account for the under-representation of racial/ethnic minorities, males, adults with less formal education, lower-income households and young adults. Because the raking process includes more socio-demographic factors to weight the data to represent the state's population, policy makers, legislators and key non-scientific audiences should expect prevalence estimates to be affected by those who are usually at risk for a particular indicator.

Preliminary analyses of Louisiana data indicate little significant change in estimates when comparing 2010 post-stratified estimates, 2010 raked estimates and 2011 raked estimates. The largest changes between 2010 Post and 2010 Raked was current smokers and leisure time physical activity. For 2010 and 2011 raked estimates, the largest change was among current smokers as well. Significant differences are defined as non-overlapping confidence intervals (Table).

Table: Comparison of 2010 Post-stratified Estimates, 2010 Raked Estimates, 2011 Raked Estimates for Selected Health Indicators – BRFSS - Louisiana

	2010 Post-stratified Estimate (95% CI)	2010 Raked Estimate (95% CI)	2011 Raked Estimate (95% CI)
Uninsured Non-elderly Adults in Louisiana*	24.5 (22.6-26.5)	30.2 (27.9-32.5)	26.8 (25.1-28.4)
Diabetes	10.3 (9.5-11.1)	10.5 (9.6-11.5)	11.8 (11.0-12.7)
Current Asthma	6.6 (5.7-7.6)	8.1 (6.9-9.3)	6.4 (5.7-7.2)
General Health (Adults in Louisiana in Fair or Poor Health)	21.1 (19.9-22.4)	23.5 (21.9-25.1)	23.0 (21.8-24.2)
Leisure Time Physical Activity	69.9 (68.3-71.4)	66.7(64.8-68.6)	66.2 (64.8-67.7)
Current Smoking	**22.1 (20.6-23.5)**	**28.2 (26.3-30.2)**	**25.7(24.3-27.1)**
Overweight BMI**	34.7 (33.1-36.4)	34.7 (32.8-36.6)	34.1 (32.7-35.6)
Obese BMI**	31.7 (30.2-33.3)	33.18 (31.3-35.1)	33.4 (32.0-34.9)
Binge Drinking***	15.0 (13.7-16.4)	15.6 (14-17.3)	16.1 (14.8-17.3)
Heart Attack	5.1 (4.5-5.9)	5.6 (4.8-6.5)	5.0 (4.4-5.6)
Coronary	5.3 (4.7-6)	5.2 (4.6-6.0)	4.8 (4.3-5.4)
Stroke	3.4 (2.9-3.9)	3.5 (2.9-4.2)	3.6 (3.1-4.2)
Adults 65+ with flu shot	64.3 (61.9-66.6)	61.9(58.7-65)	70.2 (68.1-72.3)
HIV Never Tested	51.4 (49.5- 53.4)	47.7 (45.3-50.1)	54.3 (52.6-55.96)
Physically Unhealthy Days	13.4 (12.3-14.5)	15.3 (13.9-16.7)	14.6 (13.7-15.7)
Activity Limitation Days	9.3 (8.4 -10.3)	10.6 (9.4-11.9)	10.2 (9.4-11.2)
Mentally Unhealthy Days (Frequent Mental Distress)	12.6 (11.5-13.8)	15.8 (14.3-17.5)	14.6 (13.5-15.7)

* *The proportion of Louisiana adults, ages 18-64, who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, government plans, or Medicare.*

** *BMI = Body Mass Index*

*** *The proportion of Louisiana adults who reported consuming five or more drinks for men and four or more drinks for women per occasion at least once in the previous month.*

Interpretation of Prevalence Estimate Changes – What Does a Higher or Lower Estimate Mean?

The inclusion of data from cell phone respondents and implementation of the raking methodology does not consistently impact all prevalence estimates the same way. Increased prevalence estimates can be misinterpreted by programs and stakeholders. Adding cell phone data into the data set increases or decreases estimates according to how the cell phone population is impacted by that specific indicator. The cell-phone population tends to be younger, have less formal education and identify themselves as racial/ethnic minorities. This is an example of how an increase in the prevalence of current smokers is expected because of the changes to BRFSS. It is difficult to determine long-term trends by comparing an estimate from one year to the next. Comparing post-stratified estimates to raked estimate, the true differences in estimates over time are not discernible. This will be especially difficult to make when years 2010 and 2011 are compared. These changes to the BRFSS methodology will cause breaks in trends, but it will improve validity, accuracy and representativeness of the Louisiana BRFSS.

Next Steps

The Health Improvement Support Unit of the Office of Public Health (OPH), Department of Health and Hospitals (DHH) in conjunction with the CDC will continue to monitor the impact of the addition of cell phone users and raking. A CDC-Morbidity and Mortality Weekly Report (MMWR) article (June 8, 2012) further describes the rationale and details of the changes in methodology. In addition, the DHH Health Statistics Section is evaluating the effects introduced in 2011, and preparing supporting documents and information on expected changes in Louisiana's prevalence estimates.

For references or additional information, please visit the DHH Bureau of Primary Care and Rural Health web site for BRFSS at *http://new.dhh.louisiana.gov/index.cfm/page/578*, or call the Louisiana State BRFSS Coordinator at the Louisiana Health Improvement Support Unit DHH, OPH at (504)568-8191.

Subject Index for the Louisiana Morbidity Report, 2011-2012

Note: Year and Issue Number are listed after the comma on each line - 12/06 = Issue Number 6 (Nov-Dec) for the Year 2012. Indices for the years 1967-1992 and 1997-2010 can be found on *http://new.dhh.louisiana.gov/index.cfm/newsroom/detail/2226*

Table: Communicable Disease Surveillance, Incidence by Region and Time Period, September-October, 2012

DISEASE		HEALTH REGION 1	2	3	4	5	6	7	8	9	TIME PERIOD Sep-Oct 2012	Sep-Oct 2011	Jan-Dec Cum 2012	Jan-Dec Cum 2011	Jan-Dec % Chg*
Vaccine-preventable															
Hepatitis B	Cases	0	0	0	0	0	0	0	1	1	2	7	40	44	NA*
	Rate[1]	0	0	0	0	0	0	0	0.3	0.3	0	0.2	0.9	1.0	NA*
Measles		0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Mumps		0	0	1	0	0	0	0	0	0	1	0	1	0	NA*
Rubella		0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Pertussis		0	4	0	0	0	0	0	0	1	5	2	45	20	125
Sexually-transmitted															
HIV/AIDS	Cases[2]	34	24	5	7	4	3	11	6	12	106	185	920	1006	-8.5
	Rate[1]	3.4	4.2	1.3	1.3	1.4	1.0	2.2	1.7	2.8	2.4	4.2	21.0	24.4	NA*
Chlamydia	Cases[3]	1,220	263	124	349	206	190	403	285	198	3,238	5,967	18,539	24,589	-24.6
	Rate[1]	146.1	39.7	30.5	59.7	70.4	61.3	74.0	80.1	36.6	71.4	131.6	408.9	542.4	N/A
Gonorrhea	Cases[3]	307	64	32	102	42	43	129	101	51	871	1,820	6,007	7,092	-15.3
	Rate[1]	36.8	9.6	7.9	17.5	14.4	13.9	23.7	28.4	9.4	19.2	40.1	132.5	156.4	N/A
Syphilis (P&S)	Cases[3]	14	5	0	8	0	5	22	5	0	59	86	261	366	-28.7
	Rate[1]	1.7	0.8	0.0	1.4	0.0	1.6	4.0	1.4	0.0	1.3	1.9	5.8	8.1	N/A
Enteric															
Campylobacter	Cases	0	5	6	3	0	2	3	4	5	28	23	149	170	-12.4
Hepatitis A	Cases	0	0	0	0	0	1	0	0	0	1	0	5	2	NA*
	Rate[1]	0	0	0	0	0	0	0	0	0	0	0	0.1	0	NA*
Salmonella	Cases	11	27	35	64	32	17	29	25	65	305	334	1227	1268	-3.2
	Rate[1]	1.1	4.8	9.3	12.4	11.9	5.6	5.7	7.1	16.9	7.1	7.7	28.4	29.4	NA*
Shigella	Cases	3	8	2	5	3	1	2	2	2	28	94	158	410	-61.5
	Rate[1]	0.3	1.4	0.5	1.0	1.1	0.3	0.4	0.6	0.5	0.6	2.2	3.7	9.5	NA*
Vibrio cholera	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Vibrio, other	Cases	2	0	1	2	0	0	0	0	1	6	7	43	49	-12.2
Other															
H. influenzae (other)		0	4	2	1	1	0	0	1	1	10	5	51	45	13.3
N. Meningitidis		0	0	0	0	0	0	0	0	0	0	2	3	11	-72.7

[1] = Cases Per 100,000.

[2] = These totals reflect people with HIV infection whose status was first detected during the specified time period. This includes people who were diagnosed with AIDS at the time HIV first was detected. Because of delays in reporting HIV/AIDS cases, the number of persons reported is a minimal estimate. Data should be considered provisional.

[3] = Prelminary data.

* = Percent Change not calculated for rates or count differences less than 5.

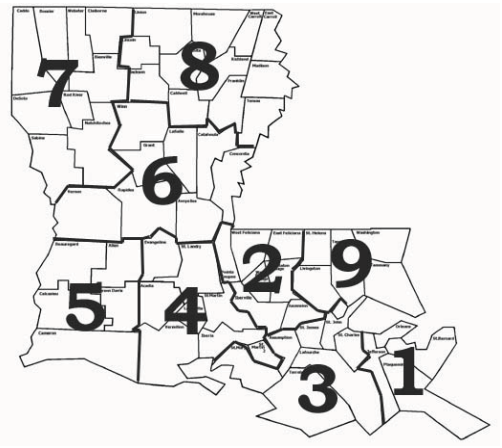
Table 2. Diseases of Low Frequency, January-December, 2012

Disease	Total to Date
Legionellosis	26
Lyme Disease	1
Malaria	10
Rabies, animal	3
Varicella	55

Table 3. Animal Rabies, September-October, 2012

Parish	No. Cases	Species
St. Tammany	1	Bat

Figure: Department of Health and Hospitals Regional Map



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Part II - The Control of Disease

LAC 51:II.105: The following diseases/conditions are hereby declared reportable with reporting requirements by Class:

Class A Diseases/Conditions - Reporting Required Within 24 Hours

Diseases of major public health concern because of the severity of disease and potential for epidemic spread-report by telephone immediately upon recognition that a case, a suspected case, or a positive laboratory result is known; [in addition, all cases of rare or exotic communicable diseases, unexplained death, unusual cluster of disease and all outbreaks shall be reported.

- Anthrax
- Avian Influenza
- Botulism
- Brucellosis
- Cholera
- Diphtheria
- *Haemophilus influenzae* (invasive disease)
- Influenza-associated Mortality
- Measles (rubeola)
- Neisseria meningitidis (invasive disease)
- Plague
- Poliomyelitis, paralytic
- Q Fever (*Coxiella burnetii)*
- Rabies (animal and human)
- Rubella (congenital syndrome)
- Rubella (German measles)
- Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV)
- Smallpox
- *Staphylococcus Aureus*, Vancomycin Intermediate or Resistant (VISA/VRSA)
- Tularemia
- Viral Hemorrhagic Fever
- Yellow Fever

Class B Diseases/Conditions - Reporting Required Within 1 Business Day

Diseases of public health concern needing timely response because of potential of epidemic spread-report by the end of the next business day after the existence of a case, a suspected case, or a positive laboratory result is known.

- Arthropod-Borne Neuroinvasive Disease and other infections (including West Nile, St. Louis, California, Eastern Equine, Western Equine and others)
- Aseptic meningitis
- Chancroid[1]
- *Escherichia coli*, Shig-toxin producing (STEC), including *E. coli* 0157:H7
- Hantavirus Pulmonary Syndrome
- Hemolytic-Uremic Syndrome
- Hepatitis A (acute disease)
- Hepatitis B (acute illness & carriage in pregnancy)
- Hepatitis B (perinatal infection)
- Hepatitis E
- Herpes (neonatal)
- Human Immunodeficiency Virus [(HIV), infection in pregnancy][2]
- Human Immunodeficiency Virus [(HIV), perinatal exposure][2]
- Legionellosis (acute disease)
- Malaria
- Mumps
- Pertussis
- Salmonellosis
- Shigellosis
- Syphilis[1]
- Tetanus
- Tuberculosis[2]
- Typhoid Fever

Class C Diseases/Conditions - Reporting Required Within 5 Business Days

Diseases of significant public health concern-report by the end of the workweek after the existence of a case, suspected case, or a positive laboratory result is known.

- Acquired Immune Deficiency Syndrome (AIDS)[3]
- Blastomycosis
- Campylobacteriosis
- Chlamydial infection[1]
- Coccidioidomycosis
- Cryptococcosis
- Cryptosporidiosis
- Cyclosporiasis
- Dengue
- Ehrlichiosis
- Enterococcus, Vancomycin Resistant [(VRE), invasive disease]
- Giardia
- Gonorrhea[1]
- Hansen Disease (leprosy)
- Hepatitis B (carriage, other than in pregnancy)
- Hepatitis C (acute illness)
- Hepatitis C (past or present infection)
- Human Immunodeficiency Virus [(HIV syndrome infection)][2]
- Listeria
- Lyme Disease
- Lymphogranuloma Venereum[1]
- Psittacosis
- Rocky Mountain Spotted Fever (RMSF)
- *Staphylococcus aureus*, Methicillin/Oxacillin Resistant[(MRSA), invasive infection]
- Staphylococcal Toxic Shock Syndrom
- Streptococcal disease, Group A (invasive disease)
- Streptococcal disease, Group B (invasive disease)
- Streptococcal Toxic Shock Syndrome
- *Streptococcus pneumoniae*, penicillin resistant [DRSP]), invasive infection]
- *Streptococcus pneumoniae* (invasive infection in children < 5 years of age)
- Transmissible Spongiform Encephalopathies
- Trichinosis
- Varicella (chickenpox)
- Vibrio Infections (other than cholera)

Class D Diseases/Conditions - Reporting Required Within 5 Business Days

- Cancer
- Carbon Monoxide Exposure and/or Poisoning[5]
- Complications of Abortion
- Congenital Hypothyroidism[4]
- Galactosemia[4]
- Heavy Metal (Arsenic, Cadmium, Mercury) Exposure and/or Poisoning (All ages)[5]
- Hemophilia[4]
- Lead Exposure and/or Poisoning (children)[4] (adults)[5]
- Pesticide-Related Illness or Injury (All ages)[5]
- Phenylketonuria[4]
- Reye's Syndrome
- Severe Traumatic Head Injury
- Severe Undernutrition (severe anemia, failure to thrive)
- Sickle Cell Disease (newborns)[4]
- Spinal Cord Injury
- Sudden Infant Death Syndrome (SIDS)

Case reports not requiring special reporting instructions (see below) can be reported by mail or facsimile on Confidential Disease Report forms (2430), fascimile (504) 568-8290, telephone (504) 568-8313, or 1-800-256-2748 for forms and instructions.

[1]Report on STD-43 form. Report cases of syphilis with active lesions by telephone, within one business day, to (504) 568-8374.

[2]Report to the Louisiana HIV/AIDS Program: Visit www.hiv.dhh.louisiana.gov or call 504-568-7474 for regional contact information.

[3]Report on CDC72.5 (f.5.2431) card

[4]Report to the Louisiana Genetic Diseases Program and Louisiana Childhood Lead Poisoning Prevention Programs: www.genetics.dhh.louisiana.gov or call (504) 568-8254.

[5]Report to the Section of Environmental Epidemiology and Toxicology: www.seet.dhh.louisiana.gov or call 1-888-293-7020

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