

Louisiana Morbidity Report



BOBBY JINDAL
GOVERNOR

Office of Public Health - Infectious Disease Epidemiology Section
P.O. Box 60630, New Orleans, LA 70160 - Phone: (504) 568-8313
www.dhh.louisiana.gov/LMR



Infectious Disease Epidemiology Main Webpage
www.infectiousdisease.dhh.louisiana.gov

KATHY KLIEBERT
SECRETARY

May - June 2013

Volume 24 Number 3

Infant Botulism Louisiana, 2013

Christine Scott-Waldron, M.S.P.H.

Botulism is a paralytic disease caused by toxins produced by *Clostridium botulinum*. *C. botulinum* is a rod-shaped, gram positive bacillus 0.5 to 2.0 μm in width, 1.6 to 22.0 μm in length, ubiquitously found in soil and marine sediments. It grows best in anaerobic (low oxygen) conditions and will form oval, subterminal spores that allow the bacteria to survive in a dormant state until exposed to conditions that support growth. The heat resistance of spores varies from type to type.

The organism was first described in 1897 by E. van Ermengem after a foodborne investigation in Belgium. When botulism was first recognized in Europe, many cases were caused by contaminated home-fermented sausages, which explains the connection between Latin "botulus" meaning sausage, and botulism. Currently sausage is rarely the cause of botulism in the United States.

Transmission occurs by one of three categories: ingestion of food containing preformed toxin; contamination of a wound; ingestion of spores which then germinate, colonize the gastrointestinal tract in infants and release toxin. Botulism is not transmissible from person-to-person. Since 1980 in the United States, infant botulism has been the most common form of botulism reported. Adult intestinal toxemia is very rare but occurs by the same route as infant botulism. There are seven serotypes of botulism toxin designated by the letters A through G and distinguished by the an-

tigenic characteristics of the neurotoxins they produce; only types A, B, E and rarely F, cause illness.

Botulism was first recognized in the U.S. in the early 1970s. Since then thousands of cases, with an average of 145 cases each year, have been reported to the Centers for Disease Control and Prevention (CDC). Of these cases, approximately 15 percent are foodborne, 65 percent are infant botulism and 20 percent are from wounds. Numerous studies have shown that vehicles of transmission typically are home-canned vegetables or fish, inadequately heated food, honey and black-tar heroin injections. Botulism from commercial products is rare.

From 1976 to 1996, 1442 cases of infant botulism were reported to the CDC from 46 states. Type A accounted for 46.5 percent and type B for 51.9 percent of these cases. The most common source of type B spores (but no toxin, as would occur in foodborne transmission) were cultured and isolated from honey, fed to an infant whose fecal specimen contained type B organisms and toxin. Family members who ate some of the same honey did not become ill. In several studies, more than 20 percent of infants had ingested honey before onset of botulism. However, since most infants with infant botulism have had no exposure to honey, the risk factors and vehicles of transmission of *C. botulinum* for the majority of cases remain unclear.

In other studies, the same types of *C. botulinum* that caused disease were isolated from soil in an infant's yard and from vacuum cleaner dust. Investigators have also frequently noted environmental conditions that might expose infants directly to sources of *C. botulinum* spores, such as a shared crib, dusty or windy locales, nearby building construction, or outdoor activities. The average annual incidence of infant botulism is approximately 1.9 per 100,000 live births. Since 1976, CDC reports 47.2 percent of all infant botulism cases have been reported from California.

The clinical presentation and severity is variable. Infant botulism is characterized by the onset of constipation and lethargy, followed by poor feeding, loss of head control, difficulty swallowing, hypotonia and sometimes respiratory insufficiency or arrest. The toxin induces a blockade of voluntary motor and autonomic functions. The incubation period for infant botulism is three to 30 days. The case-fatality rate of hospitalized cases in the U.S. is less than one percent. There is no vaccine available and there is no natural immunity to the disease. In general, affected infants reported to the CDC had normal gestation and delivery, tended to have had higher birth weights and also were more commonly breast-fed. No congenital abnormalities have been shown to be associated with

(Continued on Page 2)

Contents

Infant Botulism - Louisiana, 2013	1
What Should Be Done With Suspect Tuberculosis?	2
Announcements - IDEpi Webpages; Changes to the Sanitary Code; Save the Date!	3
Super Bowl - Hospital Emergency Department Syndromic Surveillance - Louisiana, 2013	3
Mothballs: An Ineffective and Dangerous Remedy For Animal Invasions	5
Investigating Reporting Discrepancies for Meningococcal Invasive Disease - Louisiana, 1999-2010	5
Influenza Vaccine: 2013-2014 Composition	6

(Infant Botulism ... Continued from Page 1)

infant botulism. The mean age at onset has been 13 weeks, ranging from one to 63 weeks. Breast-feeding is associated with an older age at onset in type B cases. The number of male and female cases were approximately equal.

Physicians may consider the diagnosis along with sepsis, electrolyte-mineral imbalance, metabolic encephalopathy, Reye syndrome or congenital myopathy. Treatment is guided by clinical diagnosis and should not wait for laboratory confirmation. Use of antitoxin early in the course of the disease is effective in reducing severity of symptoms. Antitoxin for children one year of age and older and for adults is available through the CDC, the Alaska Division of Public Health and the California Department of Public Health (CDPH); antitoxin for infants is available from the CDPH. The Department of Health and Hospitals' Infectious Disease Epidemiology Section, should be notified promptly when infant botulism is suspected to arrange diagnostic testing.

Since 1965, isolated cases of botulism in Louisiana have been reported. Foodborne botulism was reported in the years 1984, 1989, 1992, 1995, 1996, 1997, 2001 and infant botulism in the years 1984, 1999, 2003, 2005 and 2009. The single cases reported in Louisiana in 2005 and in 2009 involved infants younger than five months of age from the Shreveport/Bossier region. Both infants were treated with anti-toxin and recovered. One infant had been fed formula with honey used as a sweetener. The other case had syrup added to the formula to treat constipation, but the mother stated she had never fed the infant honey.

A 2013 case being reported in Louisiana is an Asian male younger than six months of age who went to a regional hospital's emergency department in late March 2013. He presented with a three-day worsening of symptoms including cough, congestion, diffuse weakness, perioral cyanosis during feeding, decreased appetite and associated hypotonia. Other signs on physical examination included weak cry, head lag, inability to swallow, no gag reflex and difficulty eliciting reflexes on neurological exam. CBC and lumbar puncture was performed which was unremarkable only for elevated platelet count in blood. The infant's gestational history was unremarkable with delivery via C-section. The hospital contacted the CDPH and administered BabyBIG® (Botulism Immune Globulin) intravenous antitoxin two days prior to stool specimen collection. A stool specimen was forwarded for testing to the CDC, which resulted in botulism toxin serogroup B positive. The parents reported breastfeeding the first few days after birth with formula supplementation, but fed the infant powder formula exclusively for 87 days prior to onset. Honey was kept in the household, although parents report the infant, pacifier and bottle nipples never came into contact with honey or any syrup. Parents reported having a grapefruit tree in the yard and purchasing honey from public farmer's market for using on sliced grapefruit and in grapefruit juice. The infant did not reside in an area with recent construction in the neighborhood. The infant has no siblings and was also under the care of a paternal grandparent, but the source of exposure is unclear. The case spent six days in the PICU not requiring mechanical ventilation, but did receive supplemental oxygen. The infant is continuing to improve.

Botulism is a Class A reportable disease. It must be reported

to the state within 24 hours by 1-800-256-2748. Botulinum toxin is also considered a potential biological weapon. Consideration of intentional use of the toxin should be suspected in the event of clusters of acute flaccid muscular paralysis originating from common geographic locations or among attendees at identical public events or gatherings. For more information, please call Christine Scott-Waldron at (504) 568-8301, or email to christine.scott-waldron@la.gov.

What Should Be Done With This Suspect Tuberculosis?

This is a question often asked epidemiologists staffing the Department of Health and Hospitals, Infectious Disease Epidemiology's 24-hour toll-free phoneline.

Hubert LeTubert (pseudonym) went to an emergency department at night for cough, shortness of breath, bloody sputum, weight loss and general fatigue. Tuberculosis (TB) was one of the main diagnoses suspected. The chest x-ray showed infiltrates in both lung upper lobes and a cavity. Sputum was collected; however, the results wouldn't be available for 24 hours.

Question: This patient is strongly suspected to have active infectious pulmonary tuberculosis. Can we detain him until we have definite results?

Answer: No, the state of Louisiana does not have the authority to detain a suspected tuberculosis case. The only authority that the state has is to detain a **confirmed** infectious pulmonary TB case placed on directly observed therapy (DOT) who does not comply with the agreement that he/she made for his/her treatment. Placing such a patient under quarantine requires a judicial review.

Question: What should be done then?

Answer: Get the maximum information on the patient: address, phone number, email address, place of employment, address and phone of relatives, so that he/she can be located in the future when confirmation is obtained.

For more information, go to the Tuberculosis Control Program website at www.dhh.louisiana.gov/index.cfm/page/1005, or call (504) 568-5015.

Louisiana Morbidity Report	
Volume 24 Number 3	May - June 2013
<p>The Louisiana Morbidity Report is published bimonthly by the DHH OPH Infectious Disease Epidemiology Section, to inform physicians, nurses and public health professionals about disease trends and patterns in Louisiana. Address correspondence to Louisiana Morbidity Report, Infectious Disease Epidemiology Section, Louisiana Department of Health and Hospitals, P.O. Box 60630, New Orleans, LA 70160.</p>	
<i>Assistant Secretary, OPH</i>	<i>J.T. Lane</i>
<i>State Epidemiologist</i>	<i>Raoult Ratard, M.D., M.P.H.</i>
<i>Editors</i>	<i>Susanne Straif-Bourgeois, Ph.D., M.P.H.</i> <i>Theresa Sokol, M.P.H.</i> <i>Rosemarie Robertson, B.S., M.T.(C), C.N.M.T.</i>

Announcements

Updates: Infectious Disease Epidemiology (IDEPI) Webpages

www.infectiousdisease.dhh.louisiana.gov

ANNUAL REPORTS: Campylobacter; Creutzfeldt Jakob Disease (CJD); Cryptosporidiosis; Cyclosporiasis; Encephalitis; Encephalitis-EEE & LAC; Encephalitis-SLE; Encephalitis-WNV; *E. Coli*; Giardia; Listeria; Outbreaks; Rabies; Salmonella; Shigella; Three Year Summary 2011-2013; Vibrios

EPIDEMIOLOGY MANUAL: Hepatitis C; Needle Disposal; Human T-cell Lymphotropic Virus (HTLV); Sanitary Code 2013; Varicella (Chickenpox) Herpes Zoster; Viral Hemorrhagic Fever (VHF)

HAI: Spring 2013 Newsletter

INFLUENZA: Emergence of Avian Influenza A (H7N9) Virus Causing Severe Human Illness-China, February-April 2013-5/1/13(MMWR); Global Concerns Regarding Novel influenza A (H7N9) Virus Infections (NEJM); Human Infection with a Novel Avian-Origin Influenza A (H7N9) Virus-4/12/13 (NEJM); ILI Surveillance; Influenza Vaccine Composition 2013-14; H7N9 Health Advisory (CDC); Preliminary Report: Epidemiology of the Avian Influenza A (H7N9) Outbreak in China-4/17/13 (NEJM); Virologic Surveillance; Weekly Report

LEEDS: LEEDS Emergency Department Syndromic Surveillance in Louisiana; Sample Reports

REPORTABLE DISEASE SURVEILLANCE: Sanitary Code 2013

SCHOOL RESOURCES: Needle Disposal Booklet for Families (EPA)

VETERINARY: Rabies in Arkansas

Changes to Sanitary Code - Page 8 On Web at:

www.dhh.louisiana.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/EpiManual/sancode042513.pdf

Save the Date! Infectious Disease Epidemiology Training 2013 -Metairie-August 8; St. Francisville-October 9; Natchitoches-November 13

Super Bowl - Hospital Emergency Department Syndromic Surveillance - Louisiana, 2013

Jenna Iberg Johnson, M.S.P.H.; Julie P. Hand, M.S.P.H.

The Department of Health and Hospitals' Infectious Disease Epidemiology (IDEpi) Section conducted enhanced syndromic surveillance in Region 1* (Jefferson, Orleans, Plaquemines, and St. Bernard Parishes) during the 2013 Super Bowl activities. Daily summaries of emergency department (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 infectious diseases and injuries. The Super Bowl took place on February 3, 2013; the period of enhanced surveillance took place from January 13, 2013 through

February 8, 2013. Data were collected and analyzed daily from all EDs in Region 1.

Infectious Disease

IDEpi tracked six syndromes related to infectious disease: fever, gastrointestinal complaints (GI), influenza-like illness (ILI), lower respiratory tract infections (LRTI), upper respiratory tract infections (URTI), and skin and soft tissue infections (SSTI). The data were monitored for spikes and increases in percentage of ED visits associated with each syndrome (Table 1), (Figure 1).

Table 1: Daily Summaries of ED Visits Related to Infectious Disease Syndromes - Region 1- Louisiana, January 13 - February 8, 2013

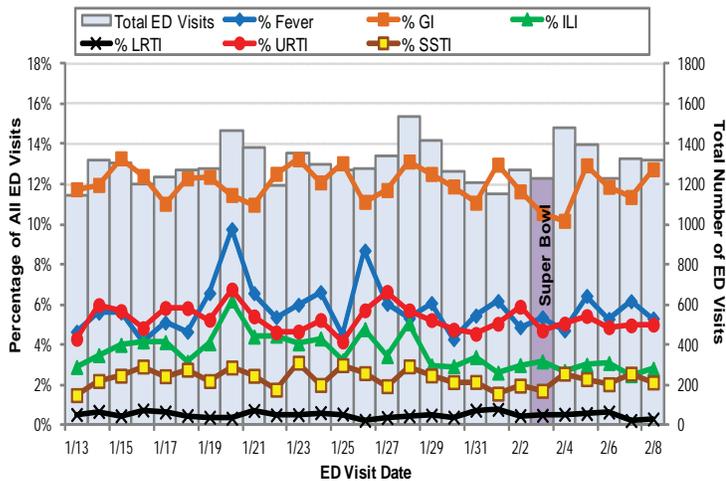
Date	Number of Hospitals	Total Number of ED Visits	Number of ED Visits Associated with Each Syndrome						Percent of Total ED Visits Associated with Each Syndrome					
			Fever	GI	ILI	LRTI	URTI	SSTI	Fever	GI	ILI	LRTI	URTI	SSTI
13-Jan	11	1141	53	134	33	6	49	17	4.6%	11.7%	2.9%	0.5%	4.3%	1.5%
14-Jan	11	1321	74	158	46	9	79	29	5.6%	12.0%	3.5%	0.7%	6.0%	2.2%
15-Jan	11	1302	73	173	52	6	74	32	5.6%	13.3%	4.0%	0.5%	5.7%	2.5%
16-Jan	11	1201	50	149	50	9	58	35	4.2%	12.4%	4.2%	0.7%	4.8%	2.9%
17-Jan	11	1234	63	136	51	8	72	30	5.1%	11.0%	4.1%	0.6%	5.8%	2.4%
18-Jan	11	1270	59	156	40	6	74	35	4.6%	12.3%	3.1%	0.5%	5.8%	2.8%
19-Jan	11	1278	84	158	52	5	67	28	6.6%	12.4%	4.1%	0.4%	5.2%	2.2%
20-Jan	11	1466	143	168	91	5	99	42	9.8%	11.5%	6.2%	0.3%	6.8%	2.9%
21-Jan	11	1385	91	152	61	10	75	34	6.6%	11.0%	4.4%	0.7%	5.4%	2.5%
22-Jan	11	1191	64	149	53	6	55	21	5.4%	12.5%	4.5%	0.5%	4.6%	1.8%
23-Jan	11	1352	81	179	55	7	63	42	6.0%	13.2%	4.1%	0.5%	4.7%	3.1%
24-Jan	11	1299	86	157	56	8	68	26	6.6%	12.1%	4.3%	0.6%	5.2%	2.0%
25-Jan	11	1273	57	166	41	7	53	38	4.5%	13.0%	3.2%	0.5%	4.2%	3.0%
26-Jan	11	1277	111	142	61	3	73	33	8.7%	11.1%	4.8%	0.2%	5.7%	2.6%
27-Jan	11	1341	81	157	46	5	89	26	6.0%	11.7%	3.4%	0.4%	6.6%	1.9%
28-Jan	11	1539	82	202	78	7	88	45	5.3%	13.1%	5.1%	0.5%	5.7%	2.9%
29-Jan	11	1415	86	177	42	7	74	35	6.1%	12.5%	3.0%	0.5%	5.2%	2.5%
30-Jan	11	1262	54	150	37	5	60	27	4.3%	11.9%	2.9%	0.4%	4.8%	2.1%
31-Jan	11	1210	66	134	41	9	55	26	5.5%	11.1%	3.4%	0.7%	4.5%	2.1%
1-Feb	11	1149	71	149	30	9	58	18	6.2%	13.0%	2.6%	0.8%	5.0%	1.6%
2-Feb	11	1272	62	148	38	6	75	25	4.9%	11.6%	3.0%	0.5%	5.9%	2.0%
3-Feb	11	1231	66	130	39	6	58	21	5.4%	10.6%	3.2%	0.5%	4.7%	1.7%
4-Feb	11	1484	70	151	40	8	75	38	4.7%	10.2%	2.7%	0.5%	5.1%	2.6%
5-Feb	11	1399	90	181	42	8	76	32	6.4%	12.9%	3.0%	0.6%	5.4%	2.3%
6-Feb	11	1230	65	146	38	8	60	25	5.3%	11.9%	3.1%	0.7%	4.9%	2.0%
7-Feb	11	1329	82	151	33	3	66	34	6.2%	11.4%	2.5%	0.2%	5.0%	2.6%
8-Feb	11	1319	70	168	37	4	66	28	5.3%	12.7%	2.8%	0.3%	5.0%	2.1%

* Map of Regions on Page 7

(Continued on Page 4)

(Super Bowl ... Continued from Page 3)

Figure 1: Percentage of ED Visits Related to Infectious Disease Syndromes and Total Number of ED Visits - Region 1 - Louisiana, January 13 - February 8, 2013



A spike in visits related to fever occurred on January 20 (9.8%), which was significantly higher than most other days in the period. Another spike occurred on January 26 (8.7 percent), which was only significantly higher than a few other days in the period (Tukey's HSD test, $p < 0.05$).

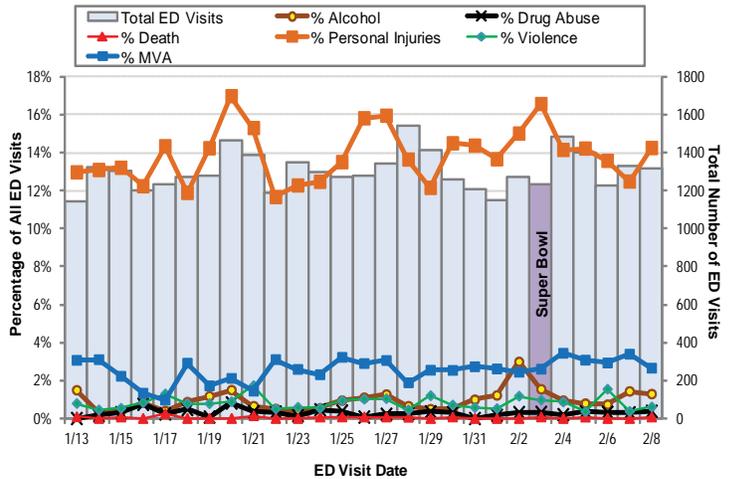
The percentage of visits related to ILI on January 20 (6.2 percent) was significantly higher than most other days in the period (Tukey's HSD test, $p < 0.05$).

There were no significant spikes in visits related to gastrointestinal complaints, lower respiratory tract infections, upper respiratory tract infections, or skin and soft tissue infections.

Injury

IDepi tracked six syndromes related to injuries: visits related to alcohol, drug abuse, death, personal injuries (lacerations, falls, fractures, etc.), violence and motor vehicle accidents (MVA). Data were monitored for spikes and increases in percentage of ED visits associated with each syndrome (Table 2), (Figure 2).

Figure 2: Percentage of ED Visits Related to Each Injury Syndrome and the Total Number of ED Visits - Region 1 - Louisiana, January 13 - February 8, 2013



The percentage of visits related to alcohol was very low but increased on weekends. Alcohol visits peaked on February 2 at 3 percent, which was significantly higher than most other days of the period (Tukey's HSD test, $p < 0.05$).

There were no significant spikes in visits related to drug abuse, death, personal injuries, violence, or motor vehicle accidents.

For more information, please contact Jenna Iberg Johnson at (504) 568-8312 or email to jenna.ibergjohnson@la.gov.

Table 2: Daily Summaries of ED Visits Related to Injury Syndromes - Region 1- Louisiana, January 13-February 8, 2013

Date	Number of Hospitals	Total Number of ED Visits	Number of ED Visits Associated with Each Syndrome						Percent of Total ED Visits Associated with Each Syndrome					
			ALCOHOL	DRUG ABUSE	DEATH	INJURY	VIOLENCE	MVA	ALCOHOL	DRUG ABUSE	DEATH	INJURY	VIOLENCE	MVA
13-Jan	11	1141	17	0	1	148	9	35	1.5%	0.0%	0.1%	13.0%	0.8%	3.1%
14-Jan	11	1321	4	2	0	173	6	41	0.3%	0.2%	0.0%	13.1%	0.5%	3.1%
15-Jan	11	1302	5	4	1	172	7	29	0.4%	0.3%	0.1%	13.2%	0.5%	2.2%
16-Jan	11	1201	10	9	0	147	10	16	0.8%	0.7%	0.0%	12.2%	0.8%	1.3%
17-Jan	11	1234	5	3	3	177	16	12	0.4%	0.2%	0.2%	14.3%	1.3%	1.0%
18-Jan	11	1270	11	6	0	151	10	37	0.9%	0.5%	0.0%	11.9%	0.8%	2.9%
19-Jan	11	1278	15	1	0	182	10	22	1.2%	0.1%	0.0%	14.2%	0.8%	1.7%
20-Jan	11	1466	22	12	0	249	13	31	1.5%	0.8%	0.0%	17.0%	0.9%	2.1%
21-Jan	11	1385	9	5	2	212	24	20	0.6%	0.4%	0.1%	15.3%	1.7%	1.4%
22-Jan	11	1191	6	4	0	139	6	37	0.5%	0.3%	0.0%	11.7%	0.5%	3.1%
23-Jan	11	1352	5	2	0	166	8	35	0.4%	0.1%	0.0%	12.3%	0.6%	2.6%
24-Jan	11	1299	7	6	1	162	7	30	0.5%	0.5%	0.1%	12.5%	0.5%	2.3%
25-Jan	11	1273	12	5	1	172	12	41	0.9%	0.4%	0.1%	13.5%	0.9%	3.2%
26-Jan	11	1277	14	1	1	202	13	37	1.1%	0.1%	0.1%	15.8%	1.0%	2.9%
27-Jan	11	1341	17	3	1	214	14	41	1.3%	0.2%	0.1%	16.0%	1.0%	3.1%
28-Jan	11	1539	10	4	1	210	7	29	0.6%	0.3%	0.1%	13.6%	0.5%	1.9%
29-Jan	11	1415	7	5	0	172	17	36	0.5%	0.4%	0.0%	12.2%	1.2%	2.5%
30-Jan	11	1262	6	4	1	183	9	32	0.5%	0.3%	0.1%	14.5%	0.7%	2.5%
31-Jan	11	1210	12	0	0	174	7	33	1.0%	0.0%	0.0%	14.4%	0.6%	2.7%
1-Feb	11	1149	14	2	0	157	6	30	1.2%	0.2%	0.0%	13.7%	0.5%	2.6%
2-Feb	11	1272	38	4	0	191	15	31	3.0%	0.3%	0.0%	15.0%	1.2%	2.4%
3-Feb	11	1231	19	4	1	204	12	32	1.5%	0.3%	0.1%	16.6%	1.0%	2.6%
4-Feb	11	1484	14	3	0	210	13	51	0.9%	0.2%	0.0%	14.2%	0.9%	3.4%
5-Feb	11	1399	11	5	1	199	5	43	0.8%	0.4%	0.1%	14.2%	0.4%	3.1%
6-Feb	11	1230	9	4	0	167	19	36	0.7%	0.3%	0.0%	13.6%	1.5%	2.9%
7-Feb	11	1329	19	4	0	166	5	45	1.4%	0.3%	0.0%	12.5%	0.4%	3.4%
8-Feb	11	1319	17	5	1	188	8	35	1.3%	0.4%	0.1%	14.3%	0.6%	2.7%

Mothballs: An Ineffective and Dangerous Remedy For Animal Invasions

Gary Balsamo, D.V.M., M.P.H. & T.M.; Kyle Moppert, M.S.

Public Health often receives reports of people or institutions attempting to control nuisance mammal (raccoons, squirrels, bats, etc.) infestations or invasions of attics and/or crawlspaces by distributing mothballs in these areas. This application is often ineffective and, more importantly, can be dangerous.

Several studies have identified roosts of bats and families of raccoons living alongside accumulations of mothballs. While it is true that some mammals do not like the smell, usually the creatures move to areas in the same space farther from the mothballs. This avoidance may precipitate the owner to distribute even more mothballs, which can increase dangerous chemical levels in the environment and pose a significant health risk. Also, to be effective, the mothballs would have to be replaced every two weeks, which is impractical.

Mothballs contain either naphthalene or paradichlorobenzene; both chemicals are regulated as pesticides by the U.S. Environmental Protection Agency and the Louisiana Department of Agriculture and Forestry. Mothballs are not labeled for use as mammal repellents; therefore the use of mothballs to repel or extract mammals is a violation of federal law. Mothballs should NEVER be utilized in any public building, especially schools, medical facilities, and day care centers. In fact, mothballs or moth crystals should never be used in areas where the vapors may be inhaled by humans, since naphthalene is toxic and paradichlorobezene is considered a potential carcinogen. Mothballs should only be used in tightly sealed containers.

The best way to remove nuisance animals from attics or crawlspaces is to extract the animals and, afterward, seal the enclosure to prevent further unwanted intrusions. Bats should be enticed to leave the enclosure through deployment of bat excluders. Nuisance terrestrial animals often must be trapped prior to removal. Extraction of terrestrial animals and bats can be dangerous; animal control agencies and professional wildlife experts are available to provide advice and assistance.

Additionally, it is important to note that all use of pesticides of any type in schools is strictly regulated by the Louisiana School Pesticide Safety Law (www.ldaf.state.la.us/portal/Offices/AgriculturalEnvironmentalSciences/PesticideEnvironmentalPrograms/PesticideProgram/tabid/368/Default.aspx).

School administrators should enlist the guidance and expertise of the LSU AgCenter (www.lsuagcenter.com), and licensed pest management professionals in making decisions on the use of pesticides.



Investigating Reporting Discrepancies for Meningococcal Invasive Disease – Louisiana, 1999-2010

Julie Holden, M.D.

From 1999 to 2010, reporting of meningococcal meningitis (Meningococcal Invasive Disease or MID) has been captured in both the Infectious Disease Reporting Information System (IDRIS) as well as in the Louisiana Hospital Discharge Database (LaHIDD).

When comparing the records however, there are some discrepancies with the reported numbers. Using last name, first name and date of birth, both data sets were matched. There were 218 cases found in both systems. IDRIS had a total of 517 cases and LaHIDD has a total of 418 cases (Table 1).

Table 1: MID Cases Found in Both IDRIS and LaHIDD – Louisiana, 1999-2010

In IDRIS Only	289	507	
In Both	218		
In LaHIDD Only	200		418

Categorizing Concordance and Discrepancy

To understand these discrepancies, a database of 707 patients

was constructed with the following categories (Table 2):

Table 2: MID Cases Found and Not Found in Both IDRIS and LaHIDD – Louisiana, 1999-2010

Category	In IDRIS		In LaHIDD		
	Condition	Number	Condition	Number	
A	MID	218	MID	218	Names matching in both IDRIS & LaHIDD
B	MID	54	MID*	54	Names matching in both IDRIS & LaHIDD
C	MID	235	Not found	0	In IDRIS but not found in LaHIDD
D	Not found	0	MID	200	In LaHIDD with MID but not found in IDRIS

MID* = Classified as a condition close to Meningococcal Invasive Disease, like Meningitis, Not Otherwise Specified, Bacterial Meningitis etc.

A and B Patients Were Concordant

Patients in category A were a perfect match. Those in category B can be considered to represent the patients whose condition was not perfectly coded in LaHIDD; they were not identified as MID,

(Continued on Page 6)

(Investigating Reporting ...Continued from Page 5)

but there was meningitis with a coding for the condition slightly off.

Examining C and D Patients

How can categories C and D be explained? These were a total mismatch. To understand these discrepancies, the medical records of a sample of recent (2008 to 2010) C and D patients were examined; this sample was 52 percent of category C patients and 53 percent of category D patients (Tables 2 and 3).

Table 2: Percent Category C Patients Found in IDRIS But Not in LaHIDD – Louisiana, 2008-2010

C1	Patients who were indeed in IDRIS and LaHIDD but their names were misspelled causing them not to match	20%
C2	Patients who were in the Emergency Department but died before admission into the hospital	40%
C3	Patients who were dead on arrival at the Emergency Department who were diagnosed at autopsy	10%
C4	Patients who were in the Emergency Department, diagnosed clinically with no bacterial confirmation, not hospitalized, but whose contacts were treated prophylactically as contacts of MID	10%
C5	Patients resident of Louisiana, but hospitalized out of state - therefore not hospitalized in Louisiana and not in LaHIDD	10%
C6	Patients hospitalized for MID in Louisiana, but not appearing in LaHIDD; (about 10% to 15% of hospitalizations are not reported in LaHIDD for miscellaneous reasons)	10%

Table 3: Percent Category D Patients Found in LaHIDD But Not in IDRIS Louisiana, 2008-2010

D1	Patients who were indeed in IDRIS and LaHIDD, but their names were misspelled causing them not to match	22%
D2	Patients who were miscoded in LaHIDD; these were not even close to being MID	73%
D3	Patients who were indeed MID in their hospital record, but were never reported in IDRIS	5%

Except for category C4 patients (MID suspects only), those from category C (reported in IDRIS only) were validated MID cases.

Who are Category C Patients in IDRIS But Not in LaHIDD?

Category C had 235 patients reported in IDRIS, but not found in LaHIDD. This is unusual since one would expect all patients to have been hospitalized. The medical records were reviewed.

In summary, the following are estimates based on computer review of 707 records and estimation based on a sample of mismatched records (Tables 4 and 5):

Table 4: Mismatched Record Categories for MID Cases in Both IDRIS and LaHIDD – Louisiana, 1999-2010

Suspect	IDRIS Only		IDRIS and LaHIDD	LaHIDD Only	
	Not Hospitalized	Missing in LaHIDD		MID Missed by IDRIS	Miscoded in LaHIDD
24	141	23	363	10	146

Table 5: Numbers and Percentages for All Categories of Matched and Mismatched Records for MID Cases in Both IDRIS and LaHIDD – Louisiana, 1999-2010

Category	Description	Number	Percent
A	Perfect match between IDRIS and LaHIDD	218	30.8
B	MID in IDRIS with compatible coding in LaHIDD, but not exact coding in LaHIDD	54	7.6
C1	Patients who were indeed in IDRIS and LaHIDD, but their names were misspelled causing them not to match	47	6.6
C2	Patients who were in the Emergency Department, but died before admission into the hospital	94	13.3
C3	Patients who were dead on arrival at the Emergency Department, who were diagnosed at autopsy	23	3.2
C4	Patients who were in the Emergency Department, diagnosed clinically with no bacterial confirmation, not hospitalized but whose contacts were treated prophylactically as contacts of MID	24	3.4
C5	Patients resident of Louisiana, but hospitalized out of state; therefore not hospitalized in Louisiana and not in LaHIDD	24	3.4
C6	Patients hospitalized for MID in Louisiana, but not appearing in LaHIDD (About 10% to 15% of hospitalizations are not reported in LaHIDD for miscellaneous reasons)	23	3.2
C	Subtotal	235	33.2
D1	Patients who were indeed in IDRIS and LaHIDD, but their names were misspelled causing them not to match	44	6.2
D2	Patients who were miscoded in LaHIDD; these were not even close to being MID	146	20.7
D3	Patients who were indeed MID in their hospital record, but were never reported in IDRIS	10	1.4
D	Subtotal	200	28.4
	Grand Total	707	100.0

Numbers in Category C and D are estimates based on a sample of medical records reviewed

1 - Using LaHIDD as a quality assurance tool for IDRIS is not an acceptable approach given the high percentage of coding errors in LaHIDD. LaHIDD has a 28 percent false positive rate.

2 - IDRIS captured 527 out of 537 real cases for a sensitivity of 98.1 percent.

For more information, please call (504) 568-8313.

Influenza Vaccine: 2013-2014 Composition

The World Health Organization has recommended vaccine viruses for the 2013-2014 Northern Hemisphere vaccines; the U.S. Food and Drug Administration’s Vaccines and Related Biological Products Advisory Committee has made recommendations for the composition of the 2013-2014 influenza vaccines to be used in the United States. Both agencies recommend that trivalent vaccines contain an A/California/7/2009-like (2009 H1N1) virus, an A(H3N2) virus antigenically like the cell-propagated, or cell-grown, virus A/Victoria/361/2011 (A/Texas/50/2012), and a B/

Massachusetts/2/2012-like (B/Yamagata lineage) virus. It is recommended that quadrivalent vaccines containing an additional influenza B virus, contain a B/Brisbane/60/2008-like (B/Victoria lineage) virus in addition to the viruses recommended for the trivalent vaccines. These recommendations were based on global influenza virus surveillance data related to epidemiology and antigenic characteristics, serological responses to 2012-2013 seasonal vaccines, and the availability of candidate strains and reagents.

Table: Communicable Disease Surveillance, Incidence by Region and Time Period, March-April, 2013

DISEASE	HEALTH REGION									TIME PERIOD				
	1	2	3	4	5	6	7	8	9	Mar-Apr 2013	Mar-Apr 2012	Jan-Apr Cum 2013	Jan-Apr Cum 2012	Jan-Apr % Chg*
	Vaccine-preventable													
Hepatitis B Cases	0	0	1	1	1	0	1	1	3	8	12	17	21	NA*
Hepatitis B Rate ¹	0	0	0.3	0.2	0.4	0	0.2	0.3	0.8	0.2	0.3	0.4	0.5	NA*
Measles	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Mumps	0	0	0	1	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	2	2	2	1	0	0	1	0	0	8	6	20	8	150.0
Sexually-transmitted														
HIV/AIDS Cases ²	43	25	8	19	3	8	8	6	2	122	214	332	402	-17.4
HIV/AIDS Rate ¹	4.3	4.3	2.1	3.5	1.1	2.7	1.6	1.7	0.5	2.8	4.9	7.6	9.2	NA*
Chlamydia Cases ³	1,211	314	178	344	173	150	503	271	191	3,335	4,416	5,499	5,318	3.4
Chlamydia Rate ¹	145.0	47.3	43.7	58.9	59.1	48.4	92.4	76.2	35.3	73.6	97.4	121.3	117.3	NA*
Gonorrhea Cases ³	169	86	38	100	39	48	143	107	36	766	1,412	1,453	1,850	-21.5
Gonorrhea Rate ¹	20.2	13.0	9.3	17.1	13.3	15.5	26.3	30.1	6.7	16.9	31.1	32.1	40.8	NA*
Syphilis (P&S) Cases ³	5	6	3	8	1	1	10	2	1	37	60	89	93	NA*
Syphilis (P&S) Rate ¹	0.6	0.9	0.7	1.4	0.3	0.3	1.8	0.6	0.2	0.8	1.3	2.0	2.1	NA*
Enteric														
Campylobacter Cases	2	5	3	1	6	2	5	3	3	30	17	55	58	NA*
Hepatitis A Cases	0	0	1	0	0	0	0	0	0	1	0	5	0	NA*
Hepatitis A Rate ¹	0	0	0.3	0	0	0	0	0	0	0	0	0.1	0	NA*
Salmonella Cases	5	14	8	22	7	8	11	7	12	94	158	184	270	-31.9
Salmonella Rate ¹	0.5	2.5	2.1	4.3	2.6	2.6	2.2	2.0	3.1	2.2	3.7	4.3	6.3	NA*
Shigella Cases	4	4	2	18	4	0	0	0	8	40	23	66	64	NA*
Shigella Rate ¹	0.4	0.7	0.5	3.5	1.5	0	0	0	2.1	0.9	0.5	1.5	1.5	NA*
Vibrio cholera Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Vibrio, other Cases	0	1	2	1	0	0	0	1	1	6	15	8	18	-55.6
Other														
<i>H. influenzae (other)</i>	0	1	0	4	0	0	1	1	0	7	7	19	23	NA*
<i>N. Meningitidis</i>	1	0	0	2	0	0	0	0	0	3	1	6	2	NA*

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 = Preliminary data.

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

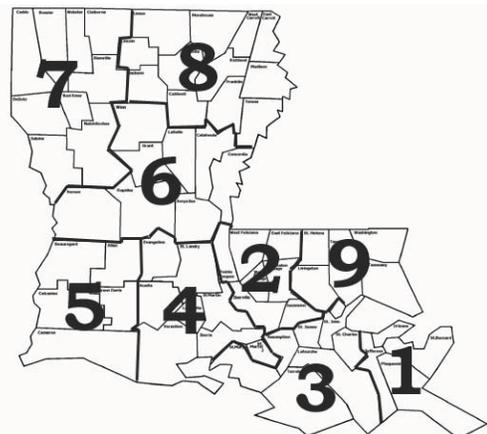
Table 2. Diseases of Low Frequency, January-December, 2013

Disease	Total to Date
Legionellosis	8
Lyme Disease	0
Malaria	1
Rabies, animal	2
Varicella	22

Table 3. Animal Rabies, March-April, 2013

Parish	No. Cases	Species
Calcasieu	1	Skunk

Figure: Department of Health and Hospitals Regional Map



Sanitary Code - State of Louisiana
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.

Acute Flaccid Paralysis	Fish/Shellfish Poisoning (Domoic Acid, neurotoxic, Ciguatera, paralytic, Scombroid)	Plague (<i>Yersinia Pestis</i>)	Smallpox
Anthrax	Foodborne Infection	Poliomyelitis (paralytic & non-paralytic)	<i>Staphylococcus aureus</i> , Vancomycin Intermediate or Resistant (VISA/VRSA)
Avian or novel strain Influenza A (initial detection)	<i>Haemophilus influenzae</i> (invasive disease)	Q Fever (<i>Coxiella burnetii</i>)	Staphylococcal Enterotoxin B (SEB)
Botulism	Influenza-associated Mortality	Rabies (animal and human)	Pulmonary Poisoning
Brucellosis	Measles (Rubeola imported or indigenous)	Ricin Poisoning	Tularemia (<i>Francisella tularensis</i>)
Cholera	<i>Neisseria meningitidis</i> (invasive infection)	Rubella (congenital syndrome)	Viral Hemorrhagic Fever
<i>Clostridium perfringens</i> (foodborne infection)	Outbreaks of Any Infectious Disease	Rubella (German Measles)	Yellow Fever
Diphtheria	Pertussis	Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV)	

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.

Amoeba (free living infection: <i>Acanthamoeba</i> , <i>Naegleria</i> , <i>Balamuthia</i> , Others)	Chancroid	Hepatitis B (perinatal infection)	Mumps
Anaplasmosis	Dengue Fever	Hepatitis E	Salmonellosis
Arthropod-Borne Neuroinvasive Disease (West Nile, St. Louis, California, Eastern Equine, Western Equine, Others)	<i>Escherichia coli</i> , Shig-toxin producing (STEC), including <i>E. coli</i> 0157:H7	Herpes (neonatal)	Shigellosis
Aseptic Meningitis	Granuloma inguinale	Human Immunodeficiency Virus [(HIV), infection in pregnancy] ²	Syphilis ¹
Babesiosis	Hantavirus (infection or Pulmonary Syndrome)	Human Immunodeficiency Virus [(HIV), perinatal exposure] ²	Tetanus
Chagas Disease	Hemolytic-Uremic Syndrome	Legionellosis (acute disease)	Tuberculosis ³ (<i>M. tuberculosis</i> , <i>M. bovis</i> , <i>M. africanum</i>)
	Hepatitis A (acute disease)	Malaria	Typhoid Fever
	Hepatitis B (acute illness & carriage in pregnancy)		

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	Enterococcus, Vancomycin Resistant [(VRE), invasive disease]	Human T Lymphocyte Virus (HTLV I & II infection)	Staphylococcal Toxic Shock Syndrome
Anaplasma Phagocytophilum	Giardia	Leptospirosis	Streptococcal Disease, Group A (invasive disease)
Blastomycosis	Glanders	Listeria	Streptococcal Disease, Group B (invasive disease)
Campylobacteriosis	Gonorrhea ¹ (genital, oral, ophthalmic, pelvic inflammatory disease, rectal)	Lyme Disease	Streptococcal Toxic Shock Syndrome
Chlamydial infection ¹	Hansen Disease (leprosy)	Lymphogranuloma venereum 1	<i>Streptococcus pneumoniae</i> , invasive disease
Coccidioidomycosis	Hepatitis B (carriage, other than in pregnancy)	Melioidosis (<i>Burkholderia pseudomallei</i>)	Transmissible Spongiform Encephalopathies (Creutzfeldt-Jacob Disease & variants)
Cryptococcosis	Hepatitis C (acute illness)	Meningitis, Eosinophilic	Trichinosis
Cryptosporidiosis	Hepatitis C (past or present infection)	Nipah Virus infection	Varicella (chickenpox)
Cyclosporiasis	Human Immunodeficiency Virus (HIV (infection other than as in Class B) ²	Psittacosis	Vibrio Infections (other than cholera)
Ehrlichiosis (human granulocytic & monocytic, <i>Ehrlichia chaffeensis</i>)		Spotted Fevers (Rickettsia species including Rocky Mountain Spotted Fever (RMSF))	Yersiniosis
		<i>Staphylococcus aureus</i> , (MRSA) invasive infection	

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

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

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

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

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

³Report on CDC72.5 (F.5.2431) card

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

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

This public health document was published at a total cost of \$1,275.00. Six thousand two hundred copies of this public document were published in this first printing at a cost of \$1,275.00. The total cost of all printings of this document, including reprints is \$1,275.00. This document was published by DHH OPH Infectious Disease Epidemiology Section to inform physicians, hospitals, and the public of current Louisiana morbidity status under authority of R.S. 40:36. This material was printed in accordance with the standards for printing for state agencies established pursuant to R.S. 43:31.