Louisiana Morbidity Report

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January - February, 2019 **Volume 30, Number 1**

Is This Really Q Fever?

Gary A. Balsamo, DVM MPH&TM; Gillian Richardson, MPH

In 2018, the Infectious Disease Epidemiology Section (IDEpi), Louisiana Office of Public Health, received reports of several potential cases of Q fever, a bacterial disease caused by the obligate intracellular bacteria, *Coxiella burnetii*. Q fever is a zoonotic disease and has been reported sporadically throughout the state over the past several decades. Human Q fever cases historically have occurred in areas where ruminants, such as sheep, goats, and cattle are maintained.

Symptoms, patient history, indices on routine hematological tests, and serum chemistries may contribute to tentative diagnosis of the disease. Treatment should be initiated on suspicion of the disease, since early samples may not reflect an antibody response. Confirmatory diagnosis of the disease is most commonly by serology, polymerase chain reaction (PCR), or identification of the organism in tissues. Results of serological testing in combination with the presence of signs and symptoms associated with the disease, are often the sole means of diagnosis. However, additional information regarding the patient's outdoor activity, association with or exposure to animals, and travel history are often critical in evaluating the accuracy of the preliminary diagnoses.

Q fever can cause both acute and chronic disease. Symptoms usually appear in about 50% of those colonized by the bacteria, the other half remaining asymptomatic. After an incubation period of approximately two to three weeks, patients may exhibit respiratory symptoms such as non-productive cough and chest

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Arboviral Travel Alert Update Louisiana, 2019

Julius Tonzel, MPH; Sean Simonson, MPH; Christine Scott-Waldron, MSPH

Photo: *Aedes aegypti*. Courtesy of https://Wikipedia.org

As the winter holiday vacation has ended and spring Mardi Gras break approaches, the Louisiana Department of Health's Infectious Disease Epidemiology Section (IDEpi) reminds physicians and patients to "think about travel."

Healthcare providers can make recommendations for a healthy trip by reminding travelers to continue to prevent mosquito-borne disease transmission. Providers can also make quicker diagnoses by obtaining a destination-specific history. Zika, chikungunya, dengue and yellow fever viruses are still actively transmitting in the Caribbean, Central and South Americas, Africa and Asia.

Please continue to check the Centers for Disease Control and Prevention (CDC) for travel updates at https://wwwnc.cdc.gov/travel/. In January the CDC issued a level 1 health alert – for Yellow fever in Nigeria (https://wwwnc.cdc.gov/travel/notices/watch/yellow-fever-nigeria).

- A large, ongoing outbreak of yellow fever in Nigeria began in September, 2017. By the end of November, 2018, the outbreak spread throughout the country. The Nigerian Ministry of Health has reported more than 3,500 cases of the disease in all 36 states and the Federal Capital Territory.
- Travelers going to Nigeria should receive vaccination against yellow fever at least 10 days before travel and

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(Arboviral ... continued from page 1)

should take steps to prevent mosquito bites while there.

• Those never vaccinated against yellow fever should avoid travel to Nigeria during this outbreak.

In December the CDC issued a level 2 health alert – for Zika virus in India (*https://wwwnc.cdc.gov/travel/notices/alert/zika-india*).

• An outbreak of Zika has been reported in India. Zika is endemic (regularly found) in India. However, there is an unusual increase in the number of Zika cases in Rajasthan and surrounding states.

• Pregnant women should NOT travel to areas with risk of Zika because Zika infection during pregnancy can cause serious birth defects.

These arboviruses, which have similar symptomology (fever, body aches, headaches), can result in long-lasting effects depending on the virus. Persons infected with Zika virus can develop Guillain-Barré syndrome, a neurologic condition that can lead to limb weakness. Pregnant women infected with Zika virus can pass the virus onto their fetus which can lead to microcephaly or other neurologic defects, and should not travel to areas with risk of Zika.

There have been neurologic effects also associated with some chikungunya and dengue infections that can potentially lead to hemorrhaging, if untreated. All travelers should strictly follow steps to prevent mosquito bites by:

• using insect repellent that are EPA-registered with DEET, picaridin or oil of lemon eucalyptus; and

• wearing long-sleeved shirts and long pants or treat clothing/gear with permethrin.

• Take steps to control mosquitoes indoors and outdoors by using air conditioning; screen windows/doors; and once a week, empty and scrub, turn over, cover or throw out items that hold water.

Upon return to Louisiana, individuals are recommended to continue to prevent mosquito bites for three weeks; even travelers with no symptoms could have been infected with an arbovirus and can potentially introduce the virus to the mosquitoes in Louisiana.

Zika virus can be sexually transmitted; unprotected sexual intercourse should be avoided for eight weeks for women and 12 weeks for men from return of travel or start of symptoms. Men are advised to wait longer than women because Zika can stay in semen longer than in other body fluids and can be transmitted to partners during that time. If any individuals develop symptoms, IDEpi should be consulted for assistance with arboviral testing.

For more information, go to *http://ldh.la.gov/index.cfm/page/2495* or contact Julius Tonzel at (504) 568-8296 or *julius.tonzel@la.gov*; or Sean Simonson at (504) 568-8342 or *sean.simonson@la.gov*.

(Q Fever ... continued from page 1)

pain; gastrointestinal symptoms such as abdominal pain, nausea, and/or vomiting; and general symptoms such as headache, fatigue, malaise, and/or myalgia. Often a high fever is present, sometimes as high as 105°F, with chills and night sweats. Most patients recover fully, but some may progress to more severe disease, such as pneumonia, hepatitis, myocarditis and/or central nervous system disease. A very small percentage of patients (less than 5%) develop the chronic form of the disease, usually exhibited as endocarditis. Vascular abnormalities, hepatic disease, skeletal manifestations, and reproductive disorders may also occur with chronic Q fever. Endocarditis in chronic Q fever can be fatal if untreated.

Routine laboratory tests may contribute to consideration of Q fever in a differential diagnosis. Patients often present with elevation of liver enzymes, normal leukocyte count, and thrombocytopenia. Disease confirmation, however, is usually by serology, the standard test recommended being the indirect immunofluorescence antibody (IFA) test. The test is performed by evaluating antibody response to phase I and II antigens; antibodies to phase I tending to be more elevated in chronic infections, and those to phase II commonly higher in acute infections. Due to the fairly common occurrence of false positives and persons with persistent antibodies to previous exposures, results of single tests must be interpreted with caution. IgM response to both phase I and II antigens can be extremely misleading due to lack of specificity of the IgM molecule. IgM and IgG seem to increase almost simultaneously, and both may not be elevated within the first week of illness, causing sera collected early in the course of the disease to frequently be negative. For these reasons, appropriately collected paired serum samples should be submitted for evaluation. Fourfold or greater increases in titer are highly indicative of an accurate diagnosis. Practitioners are reminded, however, that treatment should be initiated upon suspicion, not confirmation, of the disease. For more detailed information on interpretation of IFA tests in diagnosis of acute and chronic Q fever, practitioners should reference the Centers for Disease Control and Prevention website: *https://www.cdc.gov/qfever/healthcare-providers/index.html*.

PCR can also be helpful in the diagnosis of the disease, however this diagnostic method is not a panacea. PCR is often negative after initiation of doxycycline therapy. A positive PCR

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is confirmation of the organism's presence, but a negative PCR does not rule out Q fever. Routine hospital blood cultures are not valuable in diagnosis, since *C. burnetii* requires specialized techniques that are only available in a limited number of laboratories.

The organism tends to be persistent in ruminant hosts, causing production losses, spontaneous abortion and stillbirth. Most infections in ruminants are otherwise asymptomatic. Aborted fetuses and birth materials from infected ruminants contain the organism, which dries and contaminates the environment. Transmission to humans historically has been primarily through inhalation of dust contaminated with the organism. Wind has played a major role in transmission, often carrying the organism and infecting people at some distance from the source. The organism exists in two primary variants, an extracellular form that persists in the environment, and an obligate intracellular form that is capable of resisting the immune system and persisting within macrophages and monocytes. It is also important to realize that the organism has an affinity for reproductive organs in women; spontaneous abortion, stillbirth, and premature birth can occur as a result of infection.

The organism has been developed in the past as a bio-weapon by several nations across the globe, and for this reason the organism is considered a select agent and is subject to special federal regulations. Reports of Q fever often precipitate alarm, not only in public health quarters but in defense and security agencies around the globe. These reports are examined very closely, especially when an unusually large number of reports are received from areas historically not associated with prevalence of the disease. Such is the case in Louisiana, where naturally occurring cases have occurred and do occur, albeit rarely.

All five suspect Q fever cases reporting to IDEpi in 2018, complained of some degree of malaise and "body ache." Four of the five experienced fever in association with other symptoms. Three exhibited respiratory symptoms, one with a cough described as "productive," and one with a condition described as mild pneumonia. One patient's complaints were almost exclusively gastrointestinal in nature, reflecting a history of nausea, diarrhea and weight loss, and a second reported "non-severe" diarrhea in addition to myalgia, a non-pruritic rash, and a urinary tract infection. Only one of the five patients exhibited a mild leukocytosis, the others showed no elevation in leukocytes. Two patients, the two showing primarily gastrointestinal symptoms, were discovered on CT scan to have hepatomegaly with hepatic changes, one with evidence of punctate granulomas and one with liver abscesses. Only one patient, one of the patients with primary respiratory symptoms, was identified with thrombocytopenia. Physical symptoms of Q fever are never pathognomonic; certainly these five patients might never have had differential diagnoses including Q fever without the associated fevers or, in the case of two patients who showed no respiratory symptoms, CT evidence of liver changes that might have been infectious in nature.

Serum samples from all five patients were tested for antibodies to *C. burnetii*. All were negative for antibodies to phase I antigens. All showed elevated IgG to phase II antigens, but elevations were below the CDC stated threshold (more than or equal to 128) to consider a single antibody titer supportive of the diagnosis. In two patients, convalescent sera were also tested, and no elevation of titers was observed. Most importantly, none of the five patients reported contact with ruminants. Three reported no contact with animals at all, and two reported contact only with household pets.

For these reasons, none of these cases were confirmed, nor were they classified as probable. It is impossible to state unequivocally that these cases did not involve *Coxiella burnetii*, but the cases did not meet CDC case definitions. It is also interesting to note that all patients suffered from conditions that might explain at least some of the reported symptoms: one congestive heart failure; one with an auto-immune "connective tissue" disorder; one with opioid addiction and obesity; one exhibiting *Strongyloides* initiated parasitic lesions; and one with severe hypersensitivities.

Doxycycline is the drug of choice for treatment of Q fever. Physicians are reminded to follow CDC recommendations for the diagnosis and treatment of both acute and chronic Q fever.

An Increase in Hepatitis A Cases: Louisiana, 2018-2019

Jenna Iberg Johnson MSPH

The Louisiana Office of Public Health (LOPH) is investigating an outbreak of Hepatitis A virus (HAV) infections in Louisiana. This increase in cases mirrors the hepatitis A outbreaks occurring in other states, which are affecting certain risk groups:

- people reporting drug use (injection and non-injection),
- people experiencing homelessness,
- men who have sex with men,
- incarcerated or recently incarcerated individuals, and
- people who have been in close contact of someone infected with Hepatitis A.

Hepatitis A is a vaccine-preventable, communicable disease of the liver caused by hepatitis A virus (HAV). It is usually transmitted person-to-person when a person unknowingly ingests the virus from objects, food, or drinks contaminated by small, undetected amounts of stool from an infected person. Hepatitis A can also spread from close personal contact with an infected person such as through sex or caring for someone who is ill.

Since 1999, when routine HAV immunization of children was recommended by the Advisory Committee on Immunization Practice (ACIP) of the Centers for Disease Control and Prevention (CDC), the number of yearly reported cases of hepatitis A in Louisiana fell dramatically from over 200 cases in 1999 to only eight cases reported in 2017. Over the past ten years, an average of nine cases are reported each year.

From January 1, 2018 to February 8, 2019, Louisiana had 66 reported cases of HAV infection, three of which are not linked to the current outbreak. Seventy-one percent of outbreak cases have been hospitalized. The age of reported cases ranges from 23 years to 69 years of age with a median of 39 years.

The best way to prevent hepatitis A is through vaccination with

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the hepatitis A vaccine. Practicing good hand hygiene – including thoroughly washing hands after using the bathroom, changing diapers, and before preparing or eating food – plays an important role in preventing the spread of hepatitis A.

All close contacts of someone infected with HAV (including household and sexual contacts), who are previously unimmunized, should receive postexposure prophylaxis (PEP) as soon as possible after exposure. PEP is only effective in preventing hepatitis A if given within the first two weeks after exposure.

LOPH recommends PEP administration, according to the following table, based on the ACIP recommendations at https://www.cdc.gov/mmwr/volumes/67/wr/mm6743a5.htm?s_cid=mm6743a5_e .

Table: LOPH Recommendations for Hepatitis A Vaccine Postexposure Prophylaxis

Age	Health Status	PEP	Notes
<12 Months	Healthy	IG	MMR vaccine should not be administered for at least three months after receipt of IG
12 Months - 40 Years	Healthy	Vaccine	
41-64 Years	Healthy	Vaccine	Person can consult physician to determine if IG is recommended in addition to vaccine
≥65 Years	Healthy	IG and Vaccine	
≥12 Months	Immunocompromised, pregnant or chronic liver disease	IG and Vaccine	
≥12 Months	Vaccine contraindicated	IG	Contraindication is life-threatening allergic reaction to a previous dose of hepatitis A vaccine, or allergy to any vaccine component.

Health care providers should consider hepatitis A diagnosis in anyone with clinically compatible symptoms, including jaundice, and particularly in at-risk patients.

At-risk patients include:

- people reporting drug use (injection and non-injection);
- people experiencing homelessness;
- men who have sex with men;
- incarcerated or recently incarcerated individuals;
- and people who have been in close contact with someone infected with hepatitis A.

Immediately call the LOPH Infectious Disease Epidemiology Hotline at 1-800-256-2748 if you suspect a patient with hepatitis A, or to discuss appropriate PEP recommendations for case contacts.

For more information, go to http://ldh.la.gov/index.cfm/page/3518#outbreak.

IDEpi Question/Answer Corner

How do I find cancer rates for my Parish?

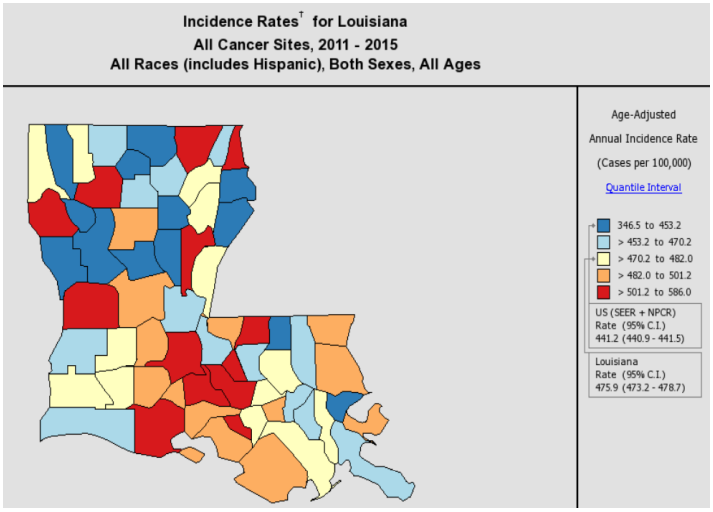
The National Cancer Institute (NIH) has an on-line resource (https://statecancerprofiles.cancer.gov/map/map.noimage.php) showing map views of cancer statisitcs for states and counties (parishes) within the United States.

As an example, data options chosen as:

Data Options

Area: Louisiana parishes
Data Group: Cancer Rates
Cancer: All Cancer Sites
Statistic: Incidence
Race/Ethnicity: All Races (incl. Hisp)
Sex: Both Sexes
Age: All Ages
Year(s): Latest 5-year average

will yield the following map:



For any questions, please contact the NIH at https://statecancerprofiles.cancer.gov/contact/.

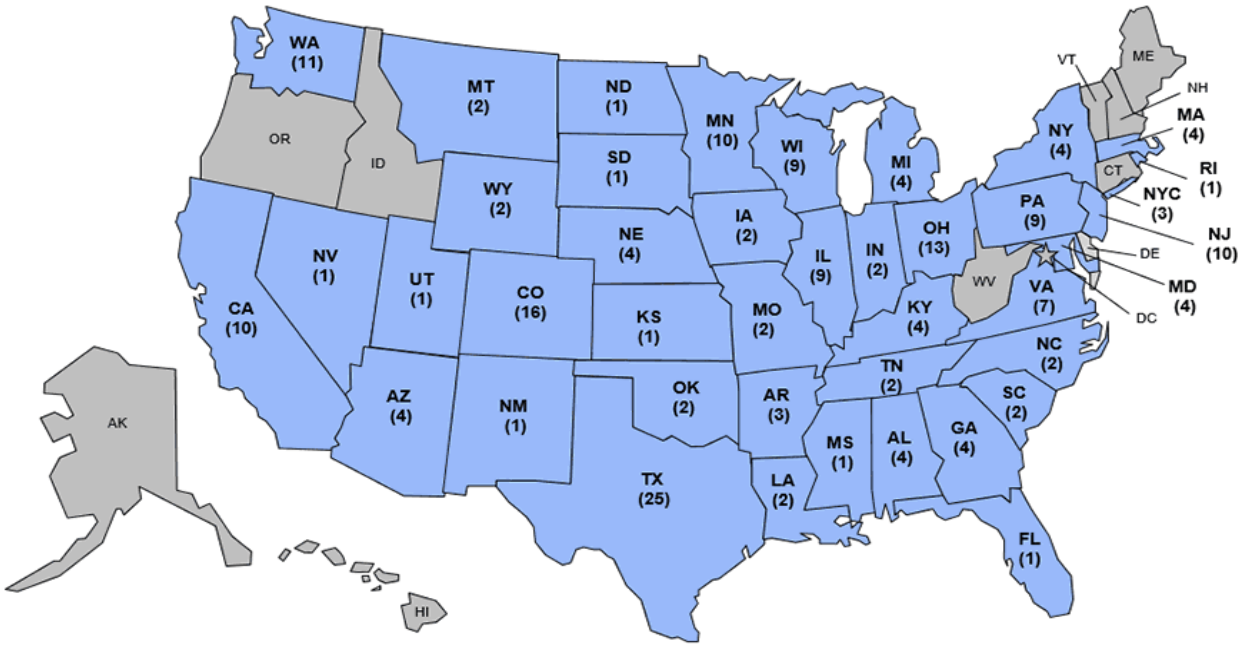
Acute Flaccid Myelitis Cases by State: United States, 2018

In 2018, there were 201 confirmed cases of acute flaccid myelitis (AFM) in 40 states. These 201 confirmed cases are among the total of 364 reports of patients under investigation (PUIs). The Centers for Disease Control and Prevention (CDC) and state and local health departments are still investigating some of these PUIs.

- In 2017, the CDC received information for 35 confirmed cases of AFM in 16 states.
- In 2016, the CDC received information for 149 confirmed cases of AFM in 39 states and the Distric of Columbia (DC).
- In 2015, the CDC received information for 22 confirmed cases of AFM in 17 states.
- From August to December 2014, the CDC received information for 120 people confirmed cases of AFM in 34 states.

The case counts represent only those cases for which information has been sent to and confirmed by the CDC.

2018 confirmed cases of acute flaccid myelitis (AFM) by state (N=201)*



** Confirmed AFM cases as of January 18, 2019. Patients under investigation are still being classified; the case counts are subject to change. One of the confirmed cases is a foreign resident (based on the country of usual residence), and therefore, not included in the state map.*

Announcements

Updates: Infectious Disease Epidemiology (IDEpi) Webpages
www.infectiousdisease.dhh.louisiana.gov

Annual: Amebiasis; Anthrax; Babesiosis; Botulism; Brucellosis; Chagas; Chikungunya; *E.Coli* O157:H7; Diphtheria; Encephalistis-SLE; Eosinophilic Meningitis; Giardia; *Haemophilus Influenzae*; Hantavirus; Murine Typhus; Outbreak Investigations;Plague; Psittacosis; Rubella; Streptococcal Invasive Disease, Group A; Tetanus; Trichinosis; Tularemia; Varicella; Vibrios

Epi Manual: Hepatitis A Public Information- CDC; Malaria; Measles Summary; Varicella (Chickenpox)

HAI/AR: Laboratory Coordination for Public Health Reporting Parts 1 and 2 -Pdf and Videos

Hepatitis: Hepatitis A at Risk Information- CDC; Hepatitis A Public Information- CDC; Hepatitis A Vaccine Information- CDC

Influenza: Week 6 Surveillance Report

Louisiana Morbidity Report: Index 1967-2018

Reportable Disease Surveillance: Epi Surveillance Summary

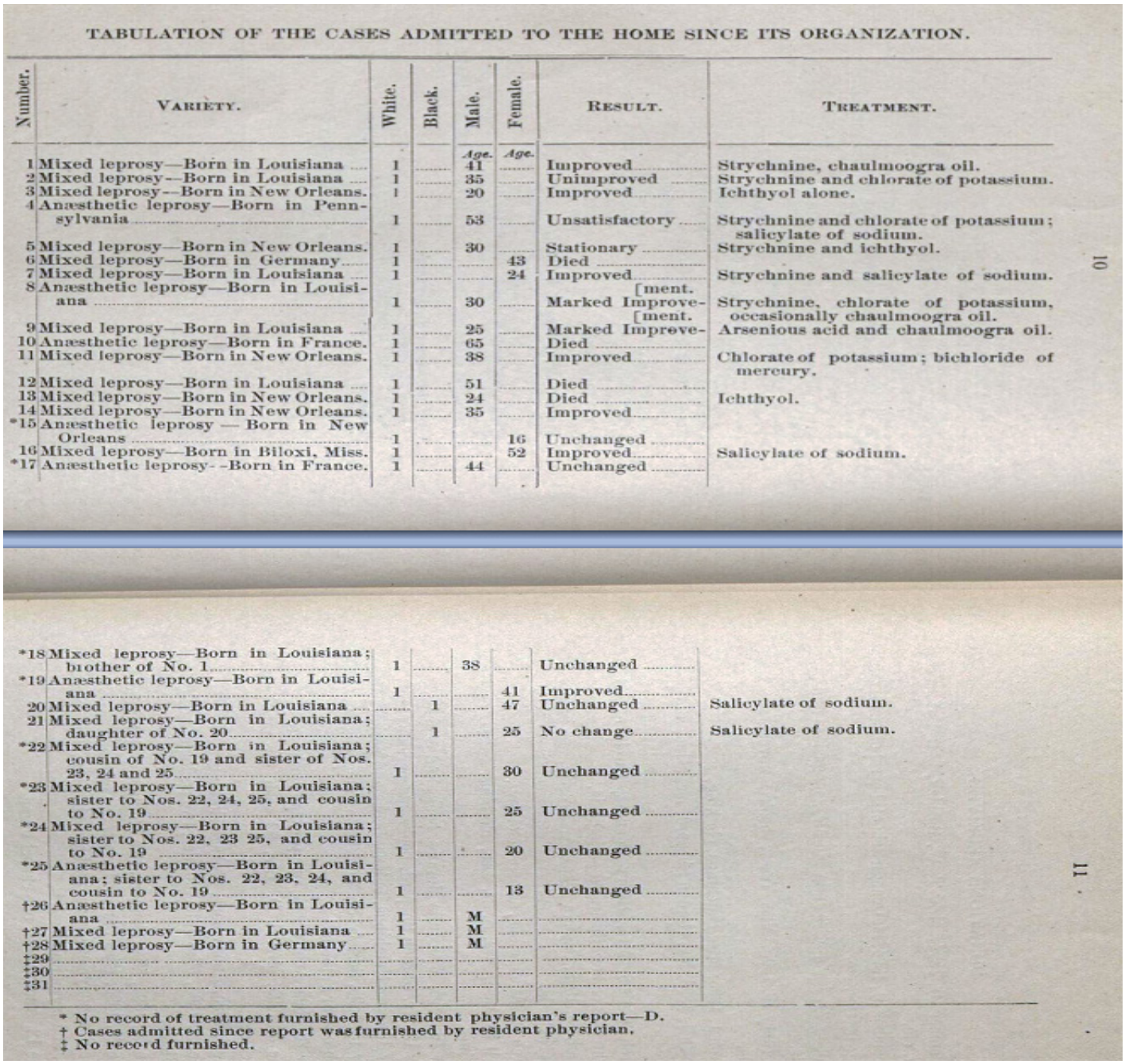
Veterinary: Bats: Exclusion, Removal and Guano Cleaning Techniques; Louisiana Bat Removal Companies; Rabies Test Submission Label; Zoonotic: Comparison of Diagnostic Procedures for *Brucella canis*; Recommendations to Veterinarians Diagnosing Brucellosis in Dogs; Signs and Symptoms of Brucellosis Checklist; Treatment of Dogs Diagnosed with *Brucella canis*

Louisiana Fact

Louisiana's Leprosarium-1785

Hansen's Disease was not uncommon in early Louisiana. Those afflicted generally congregated in New Orleans where they could obtain more alms than in any other part of the colony. Governor, Don Estevan Miro built a hospital known as "La Terre des Lépreux," or Leper's Land located between Bayou St. John and the neighborhood of Tremé. By persuasion, legal or voluntary action, the hospital number increased to 31 (Photo).

Photo: First Annual Report of the Louisiana Board of Control of the Leper Home of Iberrville Parish; New Orleans, 1896; L. Graham & Son
Courtesy of: Adeline Williams



TABULATION OF THE CASES ADMITTED TO THE HOME SINCE ITS ORGANIZATION.

Number.	Variety.	White.	Black.	Male.	Female.	Result.	Treatment.
				Age.	Age.		
1	Mixed leprosy—Born in Louisiana	1		41		Improved	Strychnine, chaulmoogra oil.
2	Mixed leprosy—Born in Louisiana	1		35		Unimproved	Strychnine and chlorate of potassium.
3	Mixed leprosy—Born in New Orleans.	1		20		Improved	Ichthyol alone.
4	Anæsthetic leprosy—Born in Pennsylvania	1		53		Unsatisfactory	Strychnine and chlorate of potassium; salicylate of sodium.
5	Mixed leprosy—Born in New Orleans.	1		30		Stationary	Strychnine and ichthyol.
6	Mixed leprosy—Born in Germany	1			43	Died	
7	Mixed leprosy—Born in Louisiana	1			24	Improved	Strychnine and salicylate of sodium.
8	Anæsthetic leprosy—Born in Louisiana	1		30		Marked Improvement.	Strychnine, chlorate of potassium, occasionally chaulmoogra oil.
9	Mixed leprosy—Born in Louisiana	1		25		Marked Improvement.	Arsenious acid and chaulmoogra oil.
10	Anæsthetic leprosy—Born in France.	1		65		Died	
11	Mixed leprosy—Born in New Orleans.	1		38		Improved	Chlorate of potassium; bichloride of mercury.
12	Mixed leprosy—Born in Louisiana	1		51		Died	
13	Mixed leprosy—Born in New Orleans.	1		24		Died	Ichthyol.
14	Mixed leprosy—Born in New Orleans.	1		35		Improved	
*15	Anæsthetic leprosy — Born in New Orleans	1			16	Unchanged	
16	Mixed leprosy—Born in Biloxi, Miss.	1			52	Improved	Salicylate of sodium.
*17	Anæsthetic leprosy—Born in France.	1		44		Unchanged	
*18	Mixed leprosy—Born in Louisiana; brother of No. 1	1		38		Unchanged	
*19	Anæsthetic leprosy—Born in Louisiana	1			41	Improved	
20	Mixed leprosy—Born in Louisiana		1		47	Unchanged	Salicylate of sodium.
21	Mixed leprosy—Born in Louisiana; daughter of No. 20		1		25	No change	Salicylate of sodium.
*22	Mixed leprosy—Born in Louisiana; cousin of No. 19 and sister of Nos. 23, 24 and 25	1			30	Unchanged	
*23	Mixed leprosy—Born in Louisiana; sister to Nos. 22, 24, 25, and cousin to No. 19	1			25	Unchanged	
*24	Mixed leprosy—Born in Louisiana; sister to Nos. 22, 23 25, and cousin to No. 19	1			20	Unchanged	
*25	Anæsthetic leprosy—Born in Louisiana; sister to Nos. 22, 23, 24, and cousin to No. 19	1			13	Unchanged	
†26	Anæsthetic leprosy—Born in Louisiana	1		M			
†27	Mixed leprosy—Born in Louisiana	1		M			
†28	Mixed leprosy—Born in Germany	1		M			
‡29							
‡30							
‡31							

* No record of treatment furnished by resident physician's report—D.
† Cases admitted since report was furnished by resident physician.
‡ No record furnished.

The leprosarium was closed in 1806 due to allegations of unsanitary conditions. Of the remaining five inmates, none were found to have leprosy. 1894 saw the beginnings of the leprosarium at Carville.

National Public Health Week
April 1-7, 2019

World Immunization Week
April 23-29, 2019

Table 1: Communicable Disease Surveillance, Incidence by Region and Time Period, November-December, 2018

DISEASE		HEALTH REGION 1	2	3	4	5	6	7	8	9	TIME PERIOD Nov-Dec 2018	Nov-Dec 2017	Jan-Dec Cum 2018	Jan-Dec Cum 2017	Jan-Dec % Chg*
Vaccine-preventable															
Hepatitis B Acute	Cases[4]	2	0	1	0	0	1	0	2	4	10	10	57	88	-35.2
	Rate[1]	0.2	0	0.3	0	0	0.3	0	0.6	1.0	0.2	0.2	1.3	2.0	NA*
Measles (Rubeola)	Cases[5]	0	0	0	0	0	0	0	0	0	0	0	2	0	NA*
Mumps	Cases[5]	3	0	3	1	0	0	0	1	0	8	1	29	71	-59.2
Rubella	Cases[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Pertussis	Cases[5]	3	0	1	2	0	1	0	1	4	12	17	119	92	29.3
Sexually-transmitted															
HIV/AIDS	Cases[2]	58	38	3	19	2	8	21	12	20	181	121	1077	1017	5.9
	Rate[1]	6.4	5.5	0.7	3.1	0.7	2.6	3.9	3.4	3.4	3.9	2.6	23.0	21.7	NA*
Chlamydia	Cases[1,3]	1,247	740	397	528	205	303	686	489	417	5,013	5,099	35,122	34,640	1.4
	Rate[1]	138.3	107.9	98.9	86.7	67.6	99.5	126.5	138.8	71.4	107.0	108.9	749.8	739.5	NA*
Gonorrhea	Cases[1,3]	519	265	126	171	82	127	279	179	135	1,883	1,849	11,711	11,979	-2.2
	Rate[1]	57.5	38.7	31.4	28.1	27.0	41.7	51.5	50.8	23.1	40.2	39.5	250.0	255.7	NA*
Syphilis (P&S)	Cases[1,3]	8	11	0	2	0	10	6	3	0	40	97	583	683	-14.6
	Rate[1]	0.9	1.6	0.0	0.3	0.0	3.3	1.1	0.9	0.0	0.9	2.1	12.4	14.6	NA*
Enteric															
Campylobacter	Cases[5]	9	10	2	47	10	2	3	5	5	93	105	774	819	-5.5
Hepatitis A	Cases[4]	0	2	0	4	0	0	0	19	3	28	0	49	8	512.5
	Rate[1]	0	0.4	0	0.8	0	0	0	5.4	0.8	0.6	0	1.1	0.2	NA*
Salmonella	Cases[5]	23	18	21	30	11	7	9	17	26	162	138	1164	1170	-0.5
	Rate[1]	2.2	3.2	5.6	5.8	4.1	2.3	1.8	4.8	6.8	3.8	3.2	27.0	27.1	NA*
Shigella	Cases[5]	5	9	4	14	4	0	1	3	2	42	29	228	239	-4.6
	Rate[1]	0.5	1.6	1.1	2.7	1.5	0	0.2	0.9	0.5	1.0	0.7	5.3	5.5	NA*
Vibrio, Cholera	Cases[4]	0	0	0	0	0	0	0	0	0	0	0	1	1	NA*
Vibrio, Other	Cases[5]	0	13	1	0	2	0	0	0	3	19	8	120	76	57.9
Other															
H. influenzae (invasive) [5]		1	4	2	3	2	0	0	1	3	16	11	85	60	41.7
N. Meningitidis (invasive) [5]		0	0	0	0	0	0	0	0	0	0	0	0	5	-100.0

[1] = Cases Per 100 000 Population.

[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.

[4] = Confirmed cases

[5] = Confirmed and Probable cases

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

Table 2: Diseases of Low Frequency, January-December, 2018

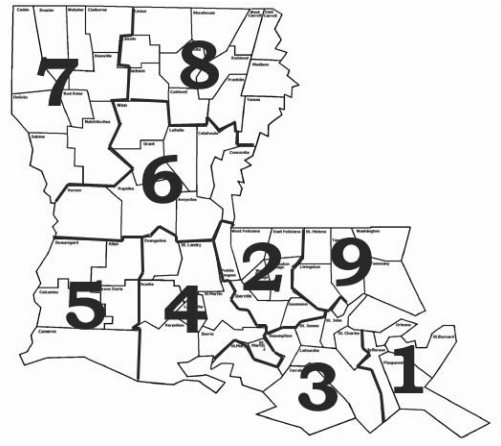
Disease	Total to Date
Legionellosis	43
Lyme Disease	4
Malaria	8
Rabies, animal	11
Varicella	103

Table 3: Animal Rabies, November-December, 2018

Parish	No. Cases	Species
	0	

Correction: September-October 2018 - 1 Additional Bat - E. Baton Rouge

Figure: Department of Health 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
- Anthrax
- Avian or Novel Strain Influenza A (initial detection)
- Botulism
- Brucellosis
- Cholera
- *Clostridium perfringens* (foodborne infection)
- Diphtheria
- Fish/Shellfish Poisoning (domoic acid, neurotoxic shellfish poisoning, ciguatera, paralytic shellfish poisoning, scombroid)
- Foodborne Infection
- *Haemophilus influenzae* (invasive infection)
- Influenza-associated Mortality
- Measles (Rubeola imported or indigenous)
- *Neisseria meningitidis* (invasive infection)
- Outbreaks of Any Infectious Disease
- Pertussis
- Plague (*Yersinia pestis*)
- Poliomyelitis (paralytic & non-paralytic)
- Q Fever (*Coxiella burnetii)*
- Rabies (animal and human)
- Ricin Poisoning
- Rubella (congenital syndrome)
- Rubella (German Measles)
- Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV)
- Smallpox
- *Staphylococcus aureus*, Vancomycin Intermediate or Resistant (VISA/VRSA)
- Staphylococcal Enterotoxin B (SEB) Pulmonary Poisoning
- Tularemia (*Francisella tularensis*)
- Viral Hemorrhagic Fever (Ebola, Lassa, Marburg, Crimean Congo, etc.)
- 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.

- Amoeba (free living infection: *Acanthamoeba, Naegleria, Balamuthia,* others)
- Anaplasmosis
- Arthropod-Borne Viral Infections (West Nile, Dengue, St, Louis, California, Eastern Equine, Western Equine, Chikungunya, Usutu, and others)
- Aseptic Meningitis
- Babesiosis
- Chagas Disease
- Chancroid
- *Escherichia coli*, Shiga-toxin producing (STEC), including *E. coli* O157:H7
- Granuloma Inguinale
- Hantavirus (infection or Pulmonary Syndrome)
- Hemolytic-Uremic Syndrome
- Hepatitis A (acute illness)
- Hepatitis B (acute illness and carriage in pregnancy)
- Hepatitis B (perinatal infection)
- Hepatitis E
- Herpes (neonatal)
- Human Immunodeficiency Virus[2] [(HIV), infection in pregnancy]
- Human Immunodeficiency Virus[2] [(HIV), perinatal exposure]
- Legionellosis
- Malaria
- Mumps
- Salmonellosis
- Shigellosis
- Syphilis[1]
- Tetanus
- Tuberculosis[3] (due to *M. tuberculosis*, *M. bovis, or M. africanum*)
- 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[3] (AIDS)
- *Anaplasma Phagocytophilum*
- Blastomycosis
- Campylobacteriosis
- Chlamydial infection[1]
- Coccidioidomycosis
- Cryptococcosis (*C. neoformans* and *C. gattii*)
- Cryptosporidiosis
- Cyclosporiasis
- Ehrlichiosis (human granulocytic, human monocytic, *E. chaffeensis* and *E. ewingii)*
- *Enterococcus*, Vancomycin Resistant [(VRE), invasive disease]
- Giardiasis
- Glanders (*Burkholderia mallei*)
- Gonorrhea[1] (genital, oral, ophthalmic, pelvic inflammatory disease, rectal)
- Hansen's Disease (leprosy)
- Hepatitis C (acute illness)
- Histoplasmosis
- Human Immunodeficiency Virus[2] (HIV (infection other than as in Class B)
- Human T Lymphocyte Virus (HTLV I and II infection)
- Leptospirosis
- Listeriosis
- Lyme Disease
- Lymphogranuloma Venereum[1]
- Melioidosis (*Burkholderia pseudomallei)*
- Meningitis, Eosinophilic (including those due to *Angiostrongylus* infection)
- Nipah Virus Infection
- Non-gonococcal Urethritis
- Ophthalmia neonatorum
- Psittacosis
- Spotted Fevers [*Rickettsia* species including Rocky Mountain Spotted Fever (RMSF)]
- *Staphylococcus aureus* (MRSA), invasive infection
- Staphylococcal Toxic Shock Syndrome
- Streptococcal Disease, Group A (invasive disease)
- Streptococcal Disease, Group B (invasive disease)
- Streptococcal Toxic Shock Syndrome
- *Streptococcus pneumoniae*, invasive disease
- Transmissible Spongiform Encephalopathies (Creutzfeldt-Jacob Disease & variants)
- Trichinosis
- Varicella (chickenpox)
- *Vibrio* Infections (other than cholera)
- Yersiniosis

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 (all ages)[4, 5]
- Pesticide-Related Illness or Injury (all ages)[5]
- Phenylketonuria[4]
- Pneumoconiosis (asbestosis, berylliosis, silicosis, byssinosis, etc.)
- Radiation Exposure, Over Normal Limits
- Reye's Syndrome
- Severe Traumatic Head Injury
- Severe Undernutrition (severe anemia, failure to thrive)
- Sickle Cell Disease[4] (newborns)
- 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 (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 form TB 2431 (8/94). Mail form to TB Control Program, DHH-OPH, P.O. Box 60630, New Orleans, LA. 70160-0630 or fax both sides of the form to (504) 568-5016

[4]Report to the Louisiana Genetic Diseases Program and Louisiana Childhood Lead Poisoning Prevention Programs: www.genetics.dhh.louisiana.gov or fascimile (504) 568-8253, telephone (504) 568-8254, or (800) 242-3112

[5]Report to the Section of Environmental Epidemiology and Toxicology: www.seet.dhh.louisiana.gov or call (225) 342-7136 or (888) 293-7020

All **laboratory facilities** shall, in addition to reporting tests indicative of conditions found in §105, report positive or suggestive results for additional conditions of public health interest. The following findings shall be reported as detected by laboratory facilities: 1. adenoviruses; 2. coronaviruses; 3 .enteroviruses; 4. hepatitis B (carriage other than in pregnancy); 5. hepatitis C (past or present infection); 6. human metapneumovirus; 7. parainfluenza viruses; 8. respiratory syncytial virus; and 9. rhinoviruses.