Louisiana Morbidity Report

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May - June, 2019 Volume 30, Number 3

Revisions to the Sanitary Code

Andrew Smith, MPH

Effective May 20, 2019 portions of the Sanitary Code (Title 51 of the Louisiana Administrative Code) related to infectious disease reporting requirements have been revised. The substantial changes are found in Part II, Chapter 1, sections 105 and 107; the full text of the revisions are contained in the May 2019 issue of the Louisiana Register, on pages 666 through 671 (*https://www.doa.la.gov/osr/REG/1905/1905.pdf*).

Ten new reportable conditions were added to improve infectious disease surveillance in Louisiana:

Acinetobacter spp., carbapenem-resistant - Class A; *Candida auris*, as well as common misidentifications of *C. auris* (e.g., *C. haemolunii, C. duobushaemolunii, C. famata, C. sake, C. lusitaniae, C. parapsilosis, C. catenulata, C. guilliermondii*, and *Rhodotorula glutinis*) - Class A; Enterobacteriaceae, carbapenem-resistant - Class A; *Pseudomonas aeruginosa*, carbapenem-resistant - Class A; hepatitis C (perinatal infection) - Class B; Zika virus-associated birth defects - Class B; Aspergillosis - Class C; Guillain-Barré syndrome - Class C; hepatitis C (infection, other than as in Class B) - Class C; and nontuberculous mycobacteria - Class C.

Several conditions have had their title in the Sanitary Code changed to clarify their scope:

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Inside

Update - Hepatitis A Outbreaks Louisiana, May 2019

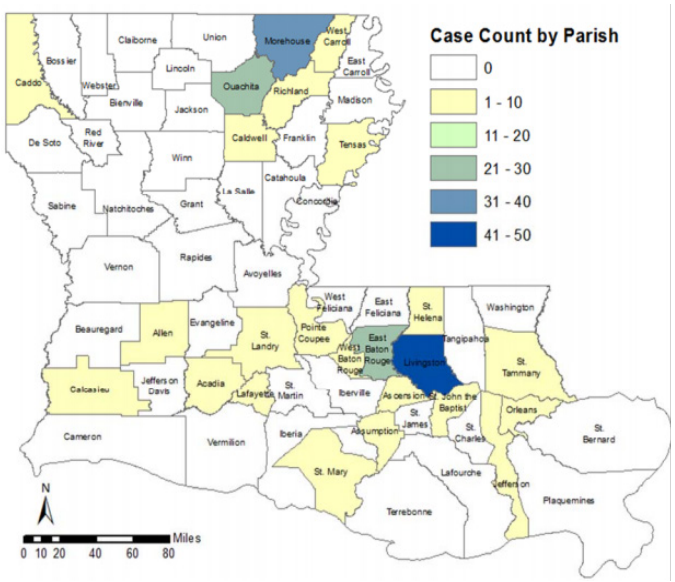
Multiple states across the country, including Louisiana, have reported outbreaks of hepatitis A, primarily among people who use drugs (injection and non-injection) and people experiencing homelessness. Since the hepatitis A outbreaks were first identified in 2016, more than 15,000 cases, 8,500 (57%) hospitalizations, and 140 deaths as a result of hepatitis A virus (HAV) infection have been reported nationally.

As of May 17, 2019, Louisiana has 173 reported cases of HAV infection linked to the current outbreak (Table, Figure).

Table: HAV Cumulative Counts - Louisiana, January 1, 2018 - May 17, 2019

Outbreak Cases	Percent Hospitalized	Deaths	Age Range	Median Age
173	64%	1	21-81 Years	35 Years

Figure: HAV Outbreak Cases by Parish - Louisiana, January 1, 2018 - May 17, 2019*



** For Weekly Updates go to http://ldh.la.gov/index.cfm/page/3518.*

The best way to prevent HAV infection is through vaccination with the hepatitis A vaccine. One dose of single-antigen hepatitis A vaccine has been shown to control outbreaks of hepatitis A and

(continued on page 4)

A Case of *Raoultella planticola* Colonization - Louisiana

A 98-year-old was admitted for a femoral head fracture with an acute subdural hematoma following a syncopal episode and a fall in the bathroom. The patient had suffered several falls during the past year. She also had an aortic valve stenosis, severe anemia, macular degeneration, chronic kidney disease and a history of breast cancer. She received a cement-less partial hip replacement. Her subdural hematoma showed signs of resolution on a repeat CT scan.

The patient's laboratory tests were unremarkable: blood glucose 89mg/dL; anemia with 9.5 hemoglobin; white blood cell count 5.3 1000/uL; platelet 257,000; BUN 13 mg/dL; creatinine 0.77 mg/dL; GFR at 59; and clean catch of urine showing greater than 100,000 Gram-negative rods. She had no signs or symptoms of urinary tract infection. The *Raoultella planticola* bacteria identified was resistant to ampicillin and sensitive to ampicillin/sulbactam, ceftriaxone, cefepime, aminoglycosides and trimethoprim sulbactam. After being stabilized, the patient was discharged to rehabilitation and was walking independently with a rolling walker.

***Raoultella* Microbiology**

Raoultella planticola is a Gram-negative rod similar to *Klebsiella pneumoniae*, named after the French microbiologist Didier Raoult. It belongs to a group of bacteria named *Klebsiella* before their genus was changed to *Raoultella. K. pneumoniae* is difficult to differentiate from *R. planticola* and *R. terrigena* using basic biochemical tests and commercial identification systems.

Studies conducted in Europe have suggested that a significant percentage of organisms identified as *Klebsiella* spp. may be *R. planticola*, but similar studies conducted in the United States suggest that recovery of *R. planticola* is rare.

Matrix-assisted laser desorption/ionization - time of flight (MALDI-TOF) mass spectrometry has been used for:the identification of bacterial isolates and has demonstrated overall good performance in the identification of Gram-negative bacilli. It can correctly identify and differentiate *Klebsiella* from *Raoultella* spp. Early reports revealed some misidentifications, but supplementation of databases should improve performance.

Raoultella is very common in the environment in soils, drinking waters, surface waters, sewage, industrial waste, marshes, insects and fish. It is found in association with mucosal surfaces and disease states of humans, other mammals, birds, and reptiles. It can also be found growing in the root systems of all types of plants, in all environments. The strain CD1 has the ability of precipitating cadmium and is useful in remediating soils exposed to this metal. CD1 can metabolize hexoses and pentoses to produce ethanol. It is used to destroy crop residue (and in this process produce ethanol).

Human infections caused by *R. planticola* rarely are reported, but in recent years the prevalence has been increasing. *Raoultella* has been found to cause a variety of infections, such as necrotizing fasciitis, cystitis, cholecystitis, pancreatitis, hepatic disease, and soft tissue infections. A main risk factor is immunocompromission, possibly use of antacids allowing increased survival of enteric bacteria.

R. planticola produce histidine decarboxylase and have been implicated in causing scombroid fish poisoning. The susceptibility testing of *R planticola* usually shows sensitivity to multiple antibiotics.

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

Announcements

Updates: Infectious Disease Epidemiology (IDEpi) Webpages
www.ldh.la.gov/infectiousdisease

Annual: Brucellosis; Chagas
Disease Public Information and Summaries: New webpage
Epi Manual: Deleted from webpages
HAI/AR: Healthcare-associated Infections and Antibiotic Resistance Program-May 2019 Newsletter
Influenza: Week 20 Report
Louisiana Morbidity Report: Louisiana Public Health Newsletter - 1970, 1971, 1972, 1973, 1974, 1975, 1976
Parasitic Vectorborne Diseases: Chagas in Dogs
Regional Information: Region 1
Reportable Disease Surveillance (reporting a disease): Sanitary Code
Reportable Disease Surveillance (specimens that must be sent to State Laboratory): May 2019
Veterinary: Rabies: Appropriate Ten-Day Observation in Dogs, Cats or Ferrets That Have Bitten Human Beings in Louisiana; Information on Bats: Removal Companies, Cleaning Guano, Exclusion Devices; Model Quarantine Order; Sanitary Code Part III. The Control of Rabies and Other Zoonotic Diseases
Veterinary: Zoonotic: Chagas in Dogs.

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Healthy and Safe Swimming Louisiana, 2019

Raychel Berkheimer, MPH

From 2015 to 2017, Louisiana had the highest rate of drownings in the U.S. for children one to 14 years of age; drowning was the second leading cause of death for Louisiana children in this age group. Drownings occur most frequently in swimming pools (42%); followed by bathtub, canal, bucket, pond, sewer, fountain, storm drain, etc. (collectively 33%); and lastly, natural bodies of water (25%). Additionally, about 20 children one to four years of age are hospitalized due to near-drownings.

The Center for Disease Control and Prevention's Healthy and Safe Swimming Week was May 20-26, 2019. The goal of this week was to provide the knowledge to ensure a healthy and safe swimming experience for everybody. This week called attention to the responsibility of swimmers, parents and caregivers, aquatics staff, and home pool owners to help prevent recreational water illnesses, drownings, and injuries.

This year's theme is "Pool Chemistry for Healthy and Safe Swimming". Chemicals are used to treat recreational water in order to prevent the spread of germs such as *Cryptosporidium, Giardia, Shigella, E. coli*, and norovirus. However, injuries can result when not used properly. Everyone participating has an important role in ensuring a safe and healthy pool chemistry. Operators of recreational pools, hot tubs, water parks, etc. should read and follow the directions provided on the product labels of pool chemicals.

Swimmers should shower before entering the pool. This removes traces of dirt, sweat, feces, urine, and cosmetics that can combine with the free chlorine in the pool. Free chlorine is the form of chlorine that kills germs that make people ill. Chemical irritants called chloramines are also formed which can cause red eyes, rashes, coughing, and wheezing. For more information about the steps to take to prevent pool chemical injuries go to *https://www.cdc.gov/healthywater/swimming/aquatics-professionals/preventing-pool-chemical-events.html*.

To keep a pool clean and safe to swim in, adhere to the following recommendations:

- Stay out of the water if you have diarrhea.
- Stay out of the water if you have an open wound that is not covered with a waterproof bandage.
- Shower before you get in the water.
- Don't urinate or defecate in the water.
- Don't swallow the water.
- Every hour – everyone out!
  - Take the kids on bathroom breaks.
  - Check diapers and change them in the bathroom or diaper changing area - not poolside - to keep germs away from the pool
  - Reapply sunscreen
  - Drink plenty of fluids
- Check your pool by using test strips to make sure the water's pH and free chlorine and bromine concentration are within the correct levels. Please follow all manufacturer reccomendations when utilizing and storing test strips.
  - pH 7.2-7.8
  - Free chlorine concentration of at least 3 ppm in hot tubs and 1 ppm in pools
  - Free bromine concentration of at least 4 ppm in hot tubs and 3 ppm in pools
- Keep an eye on children at all times. Children can drown in seconds and in silence.

For more information go to *http://ldh.la.gov/index.cfm/page/535*, or contact Raychel Berkheimer at (504) 568-8307 or *raychel.berkheimer@la.gov*.

Rabies - Louisiana, 2019

In May, a fourth rabid animal was reported and confirmed in the Office of Public Health Region 7*, northwest Louisiana. A rabid skunk was identified in DeSoto Parish, observed and collected by the Louisiana Department of Wildlife and Fisheries, and submitted to the *Southeastern Cooperative Wildlife Disease Study* at the University of Georgia College of Veterinary Medicine for testing. This was the third rabid animal reported from DeSoto Parish (the other two animals were skunks.) A rabid skunk also was also identified earlier in the year in Caddo Parish.

The epizootic of skunk rabies is a reminder of the importance of appropriately administered rabies vaccines in all pet species. One should be aware that rabies surveillance in Louisiana is restricted to testing animals that potentially expose humans or pet animals. The small number of cases reported is not an indication of the actual prevalence of the disease in Louisiana wildlife.

For more information go to *http://ldh.la.gov/index.cfm/page/790* or contact Dr. Gary Balsamo at (504) 568-8315 or *gary.balsamo@la.gov*.

* *Map of Regions on Page 7*

(Update - Hepatitus A ... continued from page 2)

provides up to 95% seroprotection in healthy individuals for up to 11 years.

Pre-vaccination serologic testing is not required to administer hepatitis A vaccine. Vaccinations should not be postponed if vaccination history cannot be obtained or records are unavailable.

Postexposure prophylaxis (PEP) is recommended for unvaccinated people who have been exposed to hepatitis A virus (HAV) in the last two weeks; those with evidence of previous vaccination do not require PEP. PEP consists of:

- Hepatitis A vaccine for people older or equal to 12 months of age
- Hepatitis A virus-specific immunoglobulin (IG) for specific populations (adults older than 40 years of age, if indicated, and persons who are immunocompromised or have chronic liver disease.)

The Louisiana Office of Public Health encourages healthcare providers to do the following:

1. Screen patients for risk factors (e.g., drug use, homelessness, incarceration, MSM, and chronic liver disease).
2. Recommend and administer hepatitis A vaccine to at-risk patients, regardless of the original presenting complaint or the type of clinical facility. In particular, the emergency department may be an individual's only interaction with the healthcare system and is an important opportunity for prevention.

   At-risk groups include:
   - People who use drugs (injection or non-injection)
   - People experiencing homelessness
   - Men who have sex with men (MSM)
   - People who are, or were recently, incarcerated
   - People with chronic liver disease, including cirrhosis, hepatitis B, or hepatitis C
   - Close contacts of current hepatitis A cases
3. Record immunizations in the state immunization information system (registry).
4. Consider hepatitis A as a diagnosis in anyone with jaundice or clinically compatible symptoms.
5. Recommend post-exposure prophylaxis for close contacts of cases of hepatitis A. PEP can be administered for close contacts at parish health units throughout the state.
6. Report all persons diagnosed with hepatitis A to the health department or to the Louisiana Department of Health's Infectious Disease Epidemiology Section at (800)256-2748 within one business day to ensure timely case investigation and follow-up of contacts.

For more information go to https://emergency.cdc.gov/han/han00412.asp.

National Immunization Awareness Month
August 2019

(Revisions to the Sanitary ... continued from page 1)

Acute flaccid paralysis has been updated to explicitly include acute flaccid myelitis; "food-borne infection" has been changed to "food-borne illness"; and arthropod-borne viral infections has been updated to explicitly include Zika virus.

Several conditions have also moved between classes to reflect changing disease surveillance priorities:

Amoeba (free living) infection (including *Acanthamoeba, Naegleria, Balamuthia* and others) has been moved from Class B to Class A; Glanders (*Burkholderia mallei*) and melioidosis (*Burkholderia pseudomallei*) have been moved from Class C to Class A; Cryptosporidiosis, cyclosporiasis, hepatitis C (acute illness), hepatitis C (perinatal infection), listeriosis, and *Vibrio* infections (other than cholera) have all been moved from Class C to Class B.

Additionally, changes were made to the requirements for specimens testing positive for certain pathogens. For all pathogens requiring specimen submission, culture-independent diagnostic test (CIDT) specimens are required to be submitted when a CIDT is performed without a culture. New pathogens requiring specimen submission are:

*Acinetobacte*r spp., pan-resistant; *Candida auris* and common misidentifications; Enterobacteriaceae, carbapenem-resistant (excluding *Klebsiella pneumoniae, K. oxytoca, E. coli*, and *Enterobacter* spp.); *Klebsiella pneumoniae, K. oxytoca, E. coli*, *Enterobacter* spp., carbapenem-resistant; and *Pseudominas aeruginosa*, carbapenem-resistant.

For pan-resistant *Acinetobacter* spp., *C. auris* and common misidentifications, and carbapenem-resistant Enterobacteriaceae (excluding *Klebsiella pneumoniae, K. oxytoca, E. coli,* and *Enterobacter* spp.), facilities should consult with the Infectious Disease Epidemiology section regarding submission and potential routing to the Center for Disease Control and Prevention's Antibiotic Resistance Laboratory Network (ARLN).

The full and current list of reportable conditions (as of May 20, 2019) by reporting class can be found on page 8 of this issue.

Save the Date!

Field Epidemiology Training - 2019

Morgan City - July 17
Shreveport - August 13
Leesville - August 21

This is a one-day workshop sponsored by the Department of Health's, Office of Public Health, Infectious Disease Epidemiology Section. It targets nurses, laboratory personnel, sanitarians, and other health care professionals interested in epidemiological principles and outbreak investigations.

This workshop is free to attend, but must be registered for because of seating limitations and to provide the adequate number of handouts.

Registration information may be found on http://www.ldh.la.gov/index.cfm/page/1816.

Is St. Louis Encephalitis Virus Re-emerging?

Christine Scott-Waldron, MSPH

St. Louis encephalitis virus (SLEV) is a member of the genus Flavivirus, with other medically important arboviruses such as West Nile virus (WNV) and Yellow Fever. Culex species mosquitoes become infected by feeding on birds infected with SLEV. Infected mosquitoes then transmit the virus to humans and animals.

Clinical presentation and distribution is similar to WNV, with most infections being asymptomatic, a few persons with a benign, nonspecific febrile illness and headache, and even fewer with meningitis or encephalitis. Most ill persons recover completely and infection is thought to confer lifelong immunity against re-infection. Severe disease is occasionally seen in young children but is more common in adults older than 40 years of age, with almost 90% of elderly persons with SLE disease developing encephalitis. Five percent to 30% of cases die from complications of this disease; the risk of fatality increases with age in older adults.

SLE cases occur in unpredictable, intermittent outbreaks or sporadic cases during the late summer and fall. From 1954 through 1977, a series of regional outbreaks occurred at approximately 10-year intervals (1954-1957, 1964-1968, and 1974-1977). The largest epidemic of SLEV neuroinvasive disease ever recognized occurred in the U.S. in 1975, with nearly 2,000 cases reported, primarily from the central states in the Ohio-Mississippi River Basin. Since 1980, outbreaks have occurred at irregular intervals such as: on the Gulf Coast in 1980 and 1986; in Houston and Florida in 1990; in Arkansas in 1991; in 1994 in New Orleans; in 1998 in Jefferson Parish; and most recently in Arizona in 2015 with 23 cases. During 2016, California and Nevada each reported sporadic activity with three cases each for the first time in over 10 years.

The last outbreak of SLE in Louisiana occurred in August 2001 with 63 cases in Monroe and West Monroe, and seven additional cases in neighboring parishes Richland, Morehouse and Franklin. The epidemic curve showed that by the time the first case was diagnosed, 60% or more of the cases were already infected. There have been sporadic cases reported in Louisiana from 2003 to 2008, but no new cases in over a decade (Figure 1).

During 2018, the Louisiana Arboviral Surveillance Testing Program, identified 17 separate positive samples of mosquitoes across six parishes in Southern Louisiana. The last time this many samples was identified was in 2014 (11 positive samples almost entirely from Orleans parish), and 2010 (31 positive samples from mostly Caddo parish).

A recent article in the December 2018 *Journal of Emerging Infectious Diseases*, indicates two important points to consider:

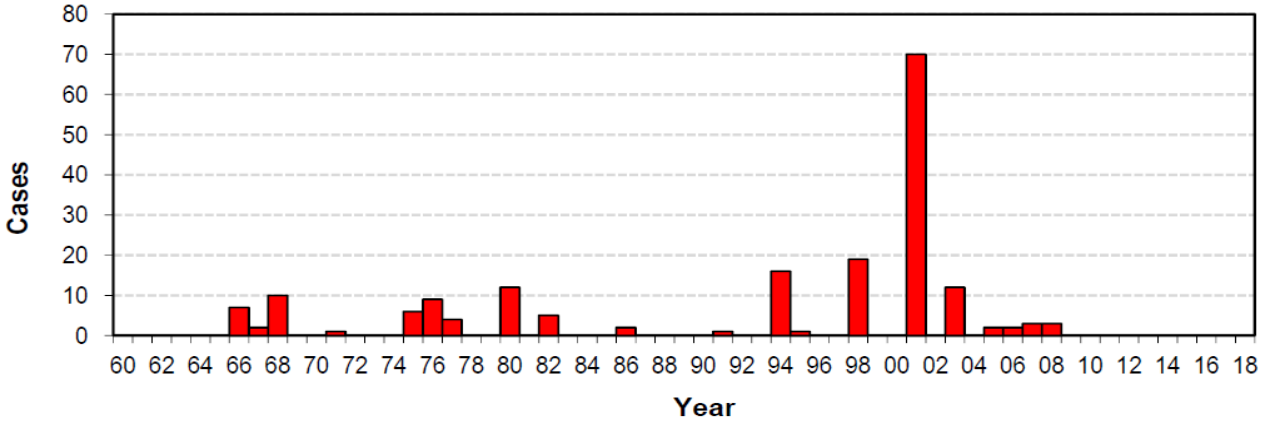
1) Mosquito activity was identified in the year prior to human cases in areas where no activity was identified. Retrospective testing of archived mosquito pools from Arizona collected in 2014 revealed a single SLEV isolate, indicating that SLEV was present in Arizona the summer before the 2015 outbreak. Also, beginning in July 2015, SLEV activity was detected by the presence of viral RNA in mosquito pools and sentinel chicken seroconversions in California.

2) The re-emergence of SLEV in California and Arizona resulted from introduction of a more virulent South American strain of SLEV. Their study performed phylogenetic analyses of genomes from mosquitoes from 2014 to 2016. The 2014 and 2015 California and Arizona SLEV isolates shared greater than 99% nucleotide identity with each other and also with their closest published relative isolated from *Cx. pipiens quinquefasciatus* mosquitoes collected in the 2005 epidemic in Argentina. The 2014 and 2015 SLEV isolates are genetically distinct from the 2003 Imperial Valley, California strain that was isolated before the 11-year absence of SLEV activity in the state. (*https://wwwnc.cdc.gov/eid/artcle/24/12/18-0372_article*)

The Infectious Disease Epidemiology Section (IDEpi), Louisiana Department of Health, recommends when testing any humans for clinical suspicion of arboviral disease, to order both WNV and SLEV specific IgM testing as flaviviruses exhibit significant cross-reactivity and are both viruses endemic to Louisiana.

For more information on mosquito-transmitted diseases or coordinating testing at the State Public Health Laboratory go to the Infectious Disease Epidemiology Arboviral webpage at *http://ldh.la.gov/index.cfm/page/2495* or contact IDEpi at (504) 568-8313.

Figure 1: Saint Louis Encephalitis Cases - Louisiana, 1960-2018



Louisiana Fact

Where Did Diphtheria Go? It Disappeared Because of Vaccination!

The late 1730s and 40s saw a pandemic of diphtheria that ran throughout much of Europe and the America colonies; in some New England towns it wiped out nearly every child younger than 21 years of age. Louisiana records show that during these years, some type of throat disease also ravaged the colony. In 1826, the common 'throat distemper disease' and 'croup' was given the name diphtheria by French physician Pierre Bretonneau.

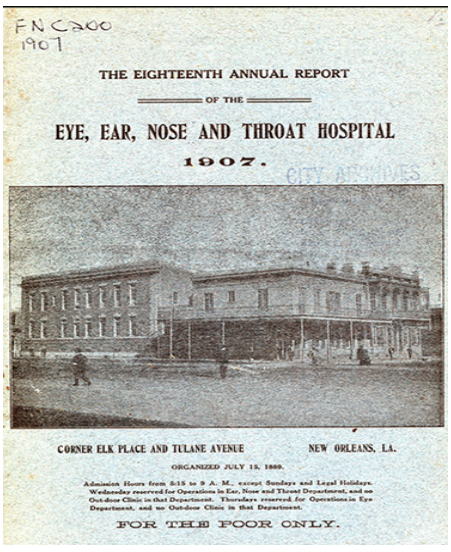
The last pandemic of diphtheria in the late 1850's also hit New Orleans; in 1847 mortuary records as well as the records of Charity Hospital show deaths attributed to this disease in. In 1858, there were 95 diphtheria deaths recorded which climbed to 253 in 1859. By 1860 the diphtheria death total dropped to 145.

As a port city, New Orleans was thought of as being an entry way for communicable diseases. During the Civil War years when New Orleans was occupied by federal troops, both the city and the rest of the state had comparatively good health. This may have been due to strict sanitary and quarantine measures enforced by the federal troops. Diseases, in general, increased during Reconstruction.

In New Orleans, 116 diphtheria cases were counted by he *New Orleans Medical and Surgical Journal* with its predition that 1887 would show a much greater number. The *Journal* called attention to statistics revealing the alarming inroad that diphtheria was making in Louisiana.

In 1894, The primary function for the institution of the Louisana State Board of Health's bacteriological laboratory in New Orleans was to provide microscopic examination of cultures to aid physicians to properly diagnose diphtheria. In the same year, the first consignment of a new diphtheria antitoxin arrived in New Orleans. In 1908, there is a record of the Eye, Ear, Nose and Throat Hospital supplying the serum to the poor (Figure 1).

Figure 1: The New Orleans Eye, Ear Nose and Throat Hospital, 1907



Courtesy of the Office of the Mayor. Records of the Executive Assistant for Intergovernmental Relations, 1994-1996, Box 4,Folder "Eye, Ear, Nose and Throat Hospital"

In the following decades, diphtheria numbers began to rise. In the autumn of 1912, New Orleans, Baton Rouge and Hammond were hit by a diphtheria epidemic with more than 500 cases and 18 deaths. During the 1920's, Louisiana's parish health units gave out vaccines including diphtheria to indigents. Between 1924 and 1925, the Natchitoches parish heath unit gave out 345 diphtheria immunitzations. In Louisiana during the 1930's the annual case number was approximately 1000 with a mortality of 100 for this disease. In 1935, the city of New Orleans declared a campaign to immunize its entire school age population; 36,000 children were immunized. The 1940-41 biennial report of the State Board of Health indicated a dramatic decrease in diphtheria.

Other outbreaks of 97 cases in 1959 and 89 cases in 1958 were documented for Louisiana in the 1960 *Louisiana Public Health Newsletter* (Figure 2).

Figure 2: *Louisiana Public Health Newsletter* - January 1960

Livingston Has Severe Outbreak of Diphtheria; Louisiana Total in '59 Reaches 97 Cases

An outbreak of diphtheria in Livingston parish left two children dead and hospitalized at least six others, five of whom were from the same family.

Through press and radio Dr. H.E. Cannon, director of the parish health unit, urged immunization of children "without delay."

Dr. Cannon said Livingston parish had a total of 9 cases reported none of whom were immunized, with two deaths (to Dec. 31). This constituted a severe outbreak "in proportion to the population of the parish," he said.

After the second death occurred the state board of health Epidemiology Team went to the rural community of Walker to assist with control measures.

For the state as a whole 97 cases of diphtheria were reported for the year 1959. This compared with a total of 89 cases for 1958, a year in which Louisiana had the second highest number of cases in the country.

Outbreaks occurred in 17 parishes, with 41 cases in the 0-5 age group; 38 in the 6-10 age bracket; 12 in the 11-15 age group and 4 cases reported in the age group over 15.

Localized outbreaks were reported in other states as well, namely, Arkansas, Minnesota and Mississippi. They occurred when, according to the PHS Morbidity and Mortality Weekly Report for Oct. 30, 1959 "For the first time since records have been kept, the national total number of cases of diphtheria has dropped below 1000." The total, 918, is 24 per cent less than the 1957 figure of 1,211. Two-thirds of the cases were reported in the South Atlantic and South Central States.

Teacher Commends "Rescue Breathing"

Clearly the most popular film of the year, "Rescue Breathing" got another commendation from Gaston P. Maillet, agriculture teacher at Marksville high school: "This is as good a film as I have ever used. It puts

Issue courtesy of Chip Riggins, MD. Full issue can be found at http://ldh.la.gov/index.cfm/newsroom/archives/126?pn=6

The last case of diphtheria was reported in 1972. For more information go to *http://ldh.la.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/Diphtheria_LaIDAnnual.pdf*.

Source: *The Rudoph Matas History of Medicine in Louisiana*- Duffy, 1958 - Vol 1 p 40; Vol. 2, pp 158-9, 342, 446; *Louisiana State Board of Health-The Progressive Years,* Gordon Gillson p 37, 239, 291, 327, 364; *New Orleans Medical and Surgical Journal 1887-1888* p 473

Table 1: Communicable Disease Surveillance, Incidence by Region and Time Period, March - April, 2019

DISEASE		HEALTH REGION 1	2	3	4	5	6	7	8	9	TIME PERIOD Mar-Apr 2019	Mar-Apr 2018	Jan-Apr Cum 2019	Jan-Apr Cum 2018	Jan-Apr % Chg*
Vaccine-preventable															
Hepatitis B Acute	Cases[4]	3	1	1	2	0	0	0	0	3	10	4	19	14	35.7
	Rate[1]	0.3	0.2	0.3	0	0	0	0	0	0.8	0.2	0.1	0.4	0.3	NA*
Measles (Rubeola)	Cases[5]	0	0	0	0	0	0	0	0	0	0	1	0	1	NA*
Mumps	Cases[5]	0	0	1	6	0	19	14	14	0	54	1	73	2	3550.0
Rubella	Cases[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Pertussis	Cases[5]	2	0	2	1	1	0	2	2	4	14	25	33	44	-25.0
Sexually-transmitted															
HIV/AIDS	Cases[2]	63	36	6	19	6	12	24	5	8	179	182	368	334	10.2
	Rate[1]	7.0	5.3	1.5	3.1	2.0	3.9	4.4	1.4	1.4	3.8	3.9	7.9	7.1	NA*
Chlamydia	Cases[1,3]	1,356	796	473	599	248	357	786	501	423	5,539	6,410	11,780	12,050	-2.2
	Rate[1]	150.4	116.1	117.8	98.4	81.7	117.2	145.0	142.2	72.4	118.2	136.8	251.5	257.2	NA*
Gonorrhea	Cases[1,3]	541	221	114	205	106	138	298	122	146	1,891	1,936	3,786	3,658	3.5
	Rate[1]	60.0	32.2	28.4	33.7	34.9	45.3	55.0	34.6	25.0	40.4	41.3	80.8	78.1	NA*
Syphilis (P&S)	Cases[1,3]	11	13	5	3	2	9	7	8	3	61	118	170	206	-17.5
	Rate[1]	1.2	1.9	1.2	0.5	0.7	3.0	1.3	2.3	0.5	1.3	2.5	3.6	4.4	NA*
Enteric															
Campylobacter	Cases[5]	3	8	0	68	9	3	3	5	5	104	122	267	215	24.2
Hepatitis A	Cases[4]	1	17	3	1	0	0	0	25	30	77	1	105	3	3400.0
	Rate[1]	0.1	3.0	0.8	0.2	0	0	0	7.1	7.8	1.8	0	2.4	0.1	NA*
Salmonella	Cases[5]	17	12	13	25	12	3	7	8	16	113	119	261	205	27.3
	Rate[1]	1.6	2.1	3.4	4.8	4.5	1.0	1.4	2.3	4.2	2.6	2.8	6.0	4.8	NA*
Shigella	Cases[5]	4	3	1	19	1	0	1	2	7	38	41	61	66	-7.6
	Rate[1]	0.4	0.5	0.3	3.7	0.4	0	0.2	0.6	1.8	0.9	1.0	1.4	1.5	NA*
Vibrio, Cholera	Cases[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Vibrio, Other	Cases[5]	0	2	2	1	1	0	0	0	5	11	17	23	23	NA*
Other															
H. influenzae (invasive) [5]		2	4	0	0	0	2	1	1	3	13	14	32	40	-20.0
N. Meningitidis (invasive) [5]		0	0	0	0	0	0	0	0	0	0	0	0	0	NA*

[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.

Figure: Department of Health Regional Map

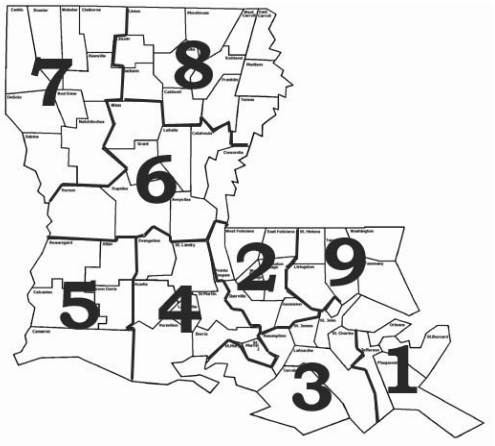


Table 2: Diseases of Low Frequency, January-April, 2019

Disease	Total to Date
Legionellosis	9
Lyme Disease	0
Malaria	0
Rabies, animal	3
Varicella	28

Table 3: Animal Rabies, March-April, 2019

Parish	No. Cases	Species
Caddo	1	Skunk
DeSoto	2	Skunk

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.

- *Acinetobacter* spp., carbapenem-resistant
- Acute Flaccid Paralysis including Acute Flaccid Myelitis
- Amoeba (free living) infection (including *Acanthamoeba, Naegleria, Balamuthia* & others)
- Anthrax
- Avian or Novel Strain Influenza A (initial detection)
- Botulism
- Brucellosis
- *Candida auris,* as well as common misidentifications of *C. auris* (e.g., *C. haemolunii, C.duobushaemolunii, C. famata, C. lusitaniae, C. sake, C. parapsilosis, C. catenulata, C. guilli-ermondii*, and *Rhodotorula glutinis*)
- Cholera
- *Clostridium perfringens* (foodborne infection)
- Diphtheria
- Enterobacteriaceae, carbapenem-resistant
- Fish/Shellfish Poisoning (domoic acid, neurotoxic shellfish poisoning, ciguatera, paralytic shellfish poisoning, scombroid)
- Foodborne Illness
- *Haemophilus influenzae* (invasive infection)
- Influenza-associated Mortality
- Measles (Rubeola imported or indigenous)
- Melioidosis (*Burkholderia pseudomallei*)
- *Neisseria meningitidis* (invasive infection)
- Outbreaks of Any Infectious Disease
- Pertussis
- Plague (*Yersinia pestis*)
- Poliomyelitis (paralytic & non-paralytic)
- *Pseudomonas aeruginosa*, carbapenem-resistant
- 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.

- Anaplasmosis
- Arthropod-Borne Viral Infections (West Nile, Dengue, St, Louis, California, Eastern Equine, Western Equine, Chikungunya, Usutu, Zika & others)
- Aseptic Meningitis
- Babesiosis
- Chagas Disease
- Chancroid
- Cryptosporidiosis
- Cyclosporiasis
- *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 C (acute illness)
- Hepatitis C (perinatal infection)
- Hepatitis E
- Herpes (neonatal)
- Human Immunodeficiency Virus [(HIV), infection in pregnancy][2,6]
- Human Immunodeficiency Virus[(HIV), perinatal exposure][2,6]
- Legionellosis
- Listeriosis
- Malaria
- Mumps
- Salmonellosis
- Shigellosis
- Syphilis[1]
- Syphilis [(*Treponema pallidum*), infection in pregnancy][1,6]
- Syphilis [(*Treponema pallidum*), perinatal exposure][1,6]
- Tetanus ,
- Tuberculosis[3] (due to *M. tuberculosis*, *M. bovis, or M. africanum*)
- Typhoid Fever
- *Vibrio* infections (other than cholera)
- Zika Virus-associated Birth Defects

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*
- Aspergillosis
- Blastomycosis
- Campylobacteriosis
- Chlamydial infection[1]
- Coccidioidomycosis
- Cryptococcosis (*C. neoformans* and *C. gattii*)
- Ehrlichiosis (human granulocytic, human monocytic, *E. chaffeensis* and *E. ewingii)*
- *Enterococcus*, Vancomycin Resistant [(VRE), invasive disease]
- Giardiasis
- Gonorrhea[1] (genital, oral, ophthalmic, pelvic inflammatory disease, rectal)
- Guillain-Barré Syndrome
- Hansen's Disease (leprosy)
- Hepatitis C ((infection, other than as in Class B)
- Histoplasmosis
- Human Immunodeficiency Virus[2] (HIV (infection other than as in Class B)
- Human T Lymphocyte Virus (HTLV I and II infection)
- Leptospirosis
- Lyme Disease
- Lymphogranuloma Venereum[1]
- Meningitis, Eosinophilic (including those due to *Angiostrongylus* infection)
- Nontuberculous Mycobacteria
- 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)
- 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.)[5]
- Radiation Exposure, Over Normal Limits[5]
- 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 STD/HIV 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, Occupational Health and Injury Surveillance Program: www.seet.dhh.louisiana.gov or call (504) 568-8150 or (888) 293-7020 or fax (504) 568-8149

[6]Report to the Louisiana STD/HIV Program on HIV/Syphilis during Pregnancy Reporting Form: Visit www.hiv.dhh.louisiana.gov or call 504-568-7474

Reference Cultures/Specimens to State Laboratory: Visit http://ldh.la.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/IsolatesToSendToStateLab_2019.pdf.

Additional reporting requirements exclusively for laboratory facilities may be found in LAC 51:II §107. The full text of the Sanitary Code may be found in Title 51 of the Louisiana Administrative Code at website https://www.doa.la.gov/Pages/osr/lac/books.aspx.