Louisiana Morbidity Report

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Recent Trends in Healthcare-associated MRSA and MRSA Bloodstream Infections

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The Healthcare-associated Infections and Antibiotic Resistance (HAI/AR) Program of the Louisiana Department of Health tracks existing and emerging infectious threats that affect patients across the provider spectrum. While the HAI/AR Program has heightened awareness of novel resistance among bacteria such as carbapenemase producing carbapenem-resistant Enterobacteriaceae (CRE), it is important to remember evidence-based methods that contain organisms with which our population is well acquainted.

Centers for Disease Control and Prevention (CDC) has recently turned its attention back to Methicillin-resistant Staphylococcus aureus (MRSA) and Methicillin-sensitive Staphylococcus aureus (MSSA) bloodstream infections with its Vital Signs report which was published in March 2019. In this report, the CDC used data from two separate sources, Cerner Health Facts Electronic Medical Records and the Emerging Infections Program (EIP).

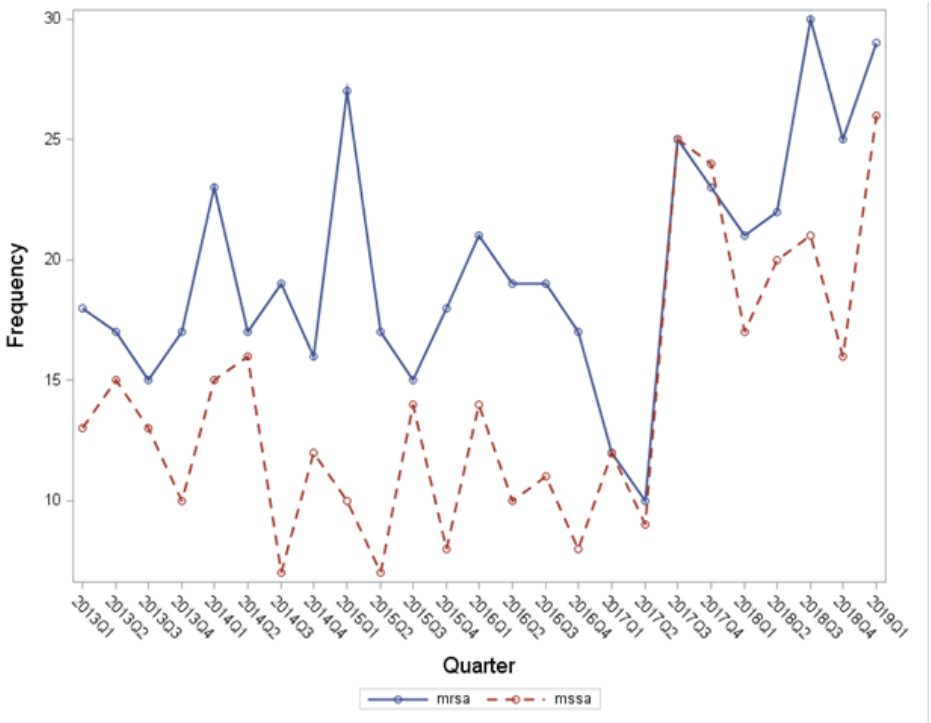
This national report showed that there was a slow decline in MRSA infections. The starkest decline was shown between the years 2005 and 2012. Since then, there has not been a significant reduction in cases. Additionally, there was a slight decrease in hospital-onset (infections identified on the fourth or greater day of hospitalization) MRSA as well as an uptick in community-acquired (infections identified in outpatient settings as well as on days one, two, or three of hospitalization) MSSA infections.

In light of this report, the HAI/AR Program sought to describe the recent MRSA and MSSA experience in Louisiana. Acute care hospital data from January 1, 2013 to March 31, 2019 were extracted from the CDC National Healthcare Safety Network (NHSN). There were 875 unique infections analyzed in the final dataset. Infections analyzed included central line-associated bloodstream infections, pneumonia, colon surgery and abdominal hysterectomy surgical site infections, urinary tract infections, and ventilator-associated events.

Data showed that the frequency of infections identified with both MRSA and MSSA steeply increased in the third quarter of 2017 (Figure 1). Additional descriptive statistics show that the median age of MRSA and

(continued on page 3)

Figure 1: MRSA and MSSA reported in NHSN, January 2013 - March 2019



Inside

How Chagas Disease in Shelter Dogs Relates to Human Health

Gary Balsamo, DVM, MPH; Wendy Wolfson, DVM; Christine Scott Waldron, MSPH; Julius Tonzel, MPH; Sean Simonson, MPH

A recent article titled "High prevalence of *Trypanosoma cruzi* infection in shelter dogs from southern Louisiana, USA", written by Areem Elmayan and published in *Parasites Vectors,* describes the elevated prevalence of Chagas disease in animal shelter canines. Public health officials and healthcare providers may be curious as exactly how the article's conclusions relate to human health in Louisiana.

Chagas disease is endemic in wildlife throughout the southern United States, especially in the southwest where the enzootic cycle is maintained in wood rats. In both the southeastern and southwestern United States, Chagas is common in raccoons, armadillos, and skunks. However, it is also common in coyotes in the southwest, and opossums in the southeast. Moreover, several capable blood-feeding triatome vector species exist in the southern United States, with *Triatoma sanguisusa* being the most common in Louisiana.

Despite many capable vectors, including those that may feed on humans and the presence of the protozoan parasite in our region, cases acquired in poorer, underdeveloped parts of Latin America make up the great majority of cases in the U.S. In fact, CDC estimates that approximately 300,000 persons in the United States are infected. Yet very few domestically transmitted cases are reported.

Since universal screening of the blood supply became a reality just after the turn of the last century, people with serological evidence of exposure and no extensive travel history are being reported, albeit in low numbers. Since 2011, the Infectious Disease Epidemiology (IDE) section at the Louisiana Office of Public Health received confirmation of at least five people in Louisiana with serological evidence of antibodies to Chagas disease. These were people who reported no travel history nor previous residence in areas of Latin America. IDE also received confirmation of seropositivity in two other individuals who were lost to follow-up, meaning the agency was unable to investigate international travel history or residence for those reports. None of the seropositive individuals were symptomatic for any phase of the disease.

The scarcity of domestically transmitted cases is observed primarily due to differences in living conditions in economically developed areas with conditions in impoverished, less developed areas, as is seen in poorer areas of Latin America. In Latin America most cases are reported from areas where primitive housing conditions exist, and/or where animals are raised in close proximity to or within homes. The conditions of these primitive homes combined with a significant supply of animal blood in the immediate area provide habitats and food for the vectors. *Trypanasoma cruzi* is not transmitted through the bite of the insect vector, but instead by contamination of wounds (often a bite site that features pruritus with subsequent itching by the victim), or conjunctiva with the insect's feces. The disease is also transmitted through consumption of the feces of the insect or the insect itself through contaminated food or drink, congenital transmission, or receipt of contaminated blood products or organs from infected individuals.

The time from ingestion of a blood meal by the vector to production of feces is thought to be important to rates of transmission. Evidence exists that vector species in areas where human transmission occurs exhibit more rapid gut transport than species in areas with lower prevalence.

Chagas disease in humans is characterized by phase. The acute phase occurs after an incubation period of seven to 14 days, although asymptomatic infections do occur. Acute phase illness is often non-specific or influenza-like, and in some patients is accompanied by inflammatory lesions at the bite site or around the eye when feces are rubbed into the conjunctiva.

(continued on page 4)

Web Announcements and Updates

Infectious Disease Epidemiology (IDEpi) Webpages
http.//infectiousdisease.ldh.la.gov

Annual Reports: Malaria, Mumps, Norovirus, Shigella, Streptococcal Group A, *Streptococcus pneumoniae*, Varicella

Arboviral: Surveillance Report

HAI: Viral Respiratory Disease Workshops

Viral/Respiratory: Weekly Influenza Surveillance Report

One Health and Rabies: Brucellosis, Ordering rabies vaccines and HRIG, *Naegleria fowleri* in animals, New World Screwworms, Wild animals in swimming pools

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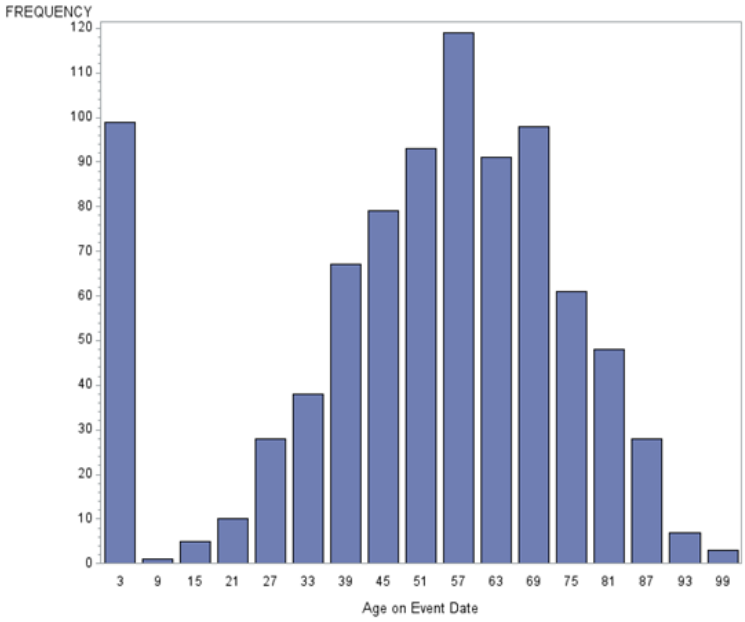
(Recent Trends in Healthcare.....continued from page 1)

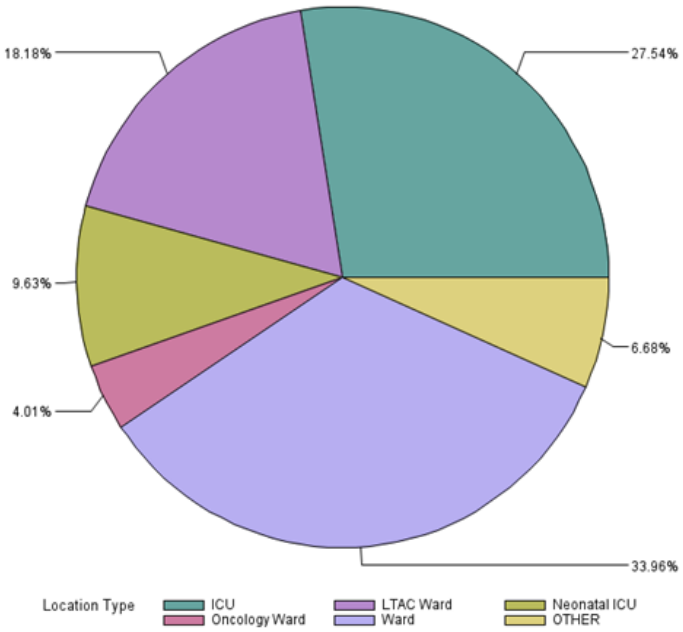
MSSA patients is 55 years (Figure 2).

Figure 2: Frequency of MRSA Infections by Age



The hospital location where most MRSA infections were identified during healthcare stays were ward locations (33.96%). Conversely most MSSA infections were identified in intensive care units (Figure 3). Of the patients who died subsequent to their MRSA and MSSA infections (N=92), 50 (54.35%) had MRSA infections and 36 (39.13%) had MSSA.

Figure 3: MRSA Infections by Hospital Location



This report demonstrates the need for clinicians to stay aware of established multi drug-resistant organisms in addition to emerging resistant threats. Facilities should take steps to fully implement prevention strategies that address device-associated and procedure-associated infections, and that interrupt transmission.

The Louisiana HAI/AR Program team will conduct a limited, invitation only, MRSA prevention collaborative this fall to review current trends and discuss methods of managing the spread of MRSA/MSSA infections. For more information, contact *erica.washington@la.gov.*

(How Chagas Disease... continued from page 2)

Most symptoms resolve spontaneously within four to eight weeks, although more severe symptoms such as myocarditis or meningoencephalitis may occur, especially in the immunosuppressed. Death is rare but can occur with the more severe acute presentations. After recovery from the acute phase, patients enter the indeterminate period of the chronic phase. This chronic indeterminate phase is asymptomatic and patients are usually not aware of infection.

The aforementioned reported cases in Louisiana all were thought to be in this asymptomatic phase when discovered. None of the patients recalled a specific acute phase, either because there had been no symptoms, or because the patient confused the symptoms with more common illnesses. The symptomatic or determinate part of the chronic phase occurs in approximately 20% to 30% of persons infected with the trypanosome. Onset of the chronic symptoms is delayed for several years to decades after initial infection.

The most common symptoms associated with chronic Chagas disease involve the heart. Conduction system abnormalities, thromboembolic phenomena, and, eventually, dilated cardiomyopathy and resultant congestive heart failure often occur. Less commonly, gastrointestinal disease occurs. This gastrointestinal presentation is reported most often in the Southern Cone area of South America, and appears to be related to geographical differences in predominant genotypes of the organism. Intramural neuronal changes eventually lead to disorders ranging from mild esophageal achalasia to mega-esophagus, and from chronic constipation to severe megacolon.

Two pharmaceuticals, benznidazole and nifurtimox, are available for treatment, but benznidazole is the only FDA approved medication in the United States. Treatment is most effective when initiated in the acute phase, but is also recommended in the chronic indeterminate phase. Of note, efficacy tends to decrease in association with duration of infection prior to treatment. Treatment of infants with congenital infections is also recommended. In fact, side effects associated with therapy tend to be less common in infants and children and more common in older adults. Contraindications for both drugs include kidney or liver failure and pregnancy. With nifurtimox contraindications extend to pre-existing or current neurological or psychiatric disorders.

Chagas disease in dogs is also phasic, exhibited in acute, latent and chronic phases. The acute phase occurs after an incubation period of five to 42 days. Acute illness is characterized by fever and signs that may include diarrhea, exercise intolerance, lethargy, tachycardia, lymphadenopathy, gait abnormalities, and neuropathies. Hepatomegaly and splenomegaly may also be observed. In dogs less than two years of age, acute congestive heart failure may occur in the acute phase. The latent phase in dogs lasts from months to years, and, when the chronic phase occurs, the condition is characterized by congestive heart failure, tachycardia, and, in some cases, sudden death. Often Chagas infected dogs are co-infected with canine heartworm disease and, since the signs are similar, it is likely that Chagas disease is frequently overlooked. Dogs most often acquire this protozoan organism through ingestion. Consumption of the triatome itself, the insect's feces, contaminated feed, or the flesh of small Chagas infected mammals such as opossums, raccoons, armadillos and rodents are the primary modes of transmission.

At present, there is no specific treatment for Chagas disease available to veterinarians for use in dogs, but symptomatic therapy can be attempted. A recent study suggests that administration of combination therapy utilizing amiodarone, an anti-arrhythmic drug, and itraconazole, an antifungal, may extend the life of dogs infected with Trypanosoma cruzi.

The goal of the study in animal shelter dogs was to assess the "magnitude and distribution" of Chagas infections in animal shelters in south Louisiana. Many animal shelters representing all regions of south Louisiana participated in the study. Investigators performed a rapid immunochromatographic test, ELISA, Western Blot, and nucleic acid analysis (PCR) on blood collected from dogs during routine shelter care. Investigators concluded that Chagas disease was evenly distributed in animals from south Louisiana animal shelters, and no statistically significant differences in regional rates of positivity were observed.

Seropositivity was defined in two manners. The first considered seropositive dogs to be those positive on at least two of the serologic assays. However, when seropositivity was defined in this manner, significant disagreement with PCR results was observed. When seropositivity was defined as a dog positive on one of the assays, PCR results were more consistently in agreement with serology. This likely indicates that dogs' positive on only one serologic assay were most often not false positives. Of the 540 dogs tested, 85 were found to be PCR positive for Chagas (15.7%, 95% CI: 12.9–19.1%). In addition, 41 of the dogs were also found to be positive on at least one of the serological tests.

One can conclude that Chagas disease is significantly prevalent in animal shelter dogs in Louisiana. Because animal shelter dogs are usually stray or abandoned animals, they are often not maintained in a manner that reflects the environmental conditions of pets in home environments. None the less, it is logical to conclude that well-cared-for pets maintained in the external environment, referred to as "outside dogs", are also at risk, especially if dog owners do not maintain preventive practices.

Although we know that domestic cases in humans do occur, the incidence is certainly not of a magnitude that suggests an ongoing major health risk. However, risk of exposure should not be totally discounted. It is likely that the current standard of living in the U.S, with housing conditions typical of those in more economically-developed areas of the world, prevents an increased risk to the general public. Nevertheless, certain behaviors or situations, including homelessness, primitive outdoor camping, bulk food storage that is not protected from insect infestation, and poor hunter hygiene may increase risk to humans.

Chagas disease has likely existed in South Louisiana and throughout the southern U.S. for centuries, and has likely been a problem in stray dogs for quite some time. The results of this study reflect an ongoing ecological reality, as opposed to a major increase in disease prevalence.

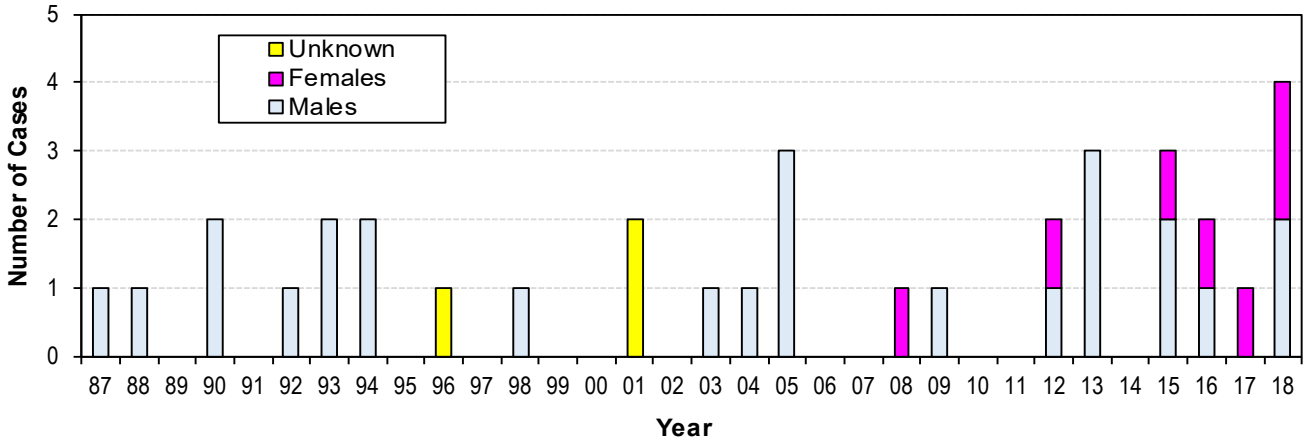
More information on transmission and suggestions to prevent dogs from being infected with Chagas disease are available on the Louisiana Department of Health website at *http://ldh.la.gov/index.cfm/page/3620.*

Question & Answer Corner

How common is brucellosis in Louisiana?

In the U.S., there are approximately 100 cases reported per year. Since 1987, there have been only sporadic cases of brucellosis in humans in Louisiana with most of the cases occurring in males. (Figure).

Figure: Brucellosis Cases - Louisiana, 1987-2018



The groups most at risk for brucellosis are abattoir workers, meat inspectors, animal handlers, veterinarians and laboratory workers.

Methods of prevention include avoiding consumption of undercooked meat and unpasteurized dairy products. A growing trend toward consumption of "farm-fresh" or "organic" unpasteurized dairy products is a cause for concern by public health officials. People who handle animals and animal tissues should protect themselves by using personal protective equipment (PPE) including rubber gloves, gowns or aprons and goggles.

Throughout the period of 2008 to 2018, there have been 17 reported cases of brucellosis in Louisiana (Table).

Table: Summary of Brucellosis Cases Exposures in Louisiana, 2008-2018

Year	#	Species	Possible Exposure
2008	1	Not specified	Dog bite
2009	2	*Melitensis*	Helped nurse a calf, owns multiple
2012	3	*Melitensis*	Skinning/slaughtering pigs
2012	4	*Suis*	Skinning/slaughtering pigs
2013	5	*Suis*	Raw hog meat contact with open
2013	6	*Suis*	Skinning/slaughtering squirrels
2013	7	*Suis*	Slaughtering pigs
2015	8	Not specified	Pet dogs, unspecified
2015	9	*Melitensis*	Skinning/slaughtering pigs
2016	10	*Melitensis*	Cheese from unpasteurized milk
2016	11	Not specified	Skinning/slaughtering pigs and deer
2016	12	Suis	Skinning/slaughtering pigs
2017	13	Not specified	Cheese from unpasteurized milk
2018	14	*Abortus*	Skinning/slaughtering pigs
2018	15	Not specified	Visited farm
2018	16	*Suis*	Skinning/slaughtering pigs
2018	17	Not specified	International travel

The complete Brucellosis annual report is available at *http://ldh.la.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/Brucellosis_LaIDAnnual.pdf.* Additional resources about brucella can be found at *http://ldh.la.gov/index.cfm/.page/3562.*

Save the Date

Viral Respiratory Diseases Detection and Containment in Long-term Care Facilities Workshops

These are half-day educational workshops targeting infection preventionists employed in long-term care settings as well as infectious disease personnel across the provider spectrum who have roles in infection surveillance and reporting. For more information or to register for a workshop visit:

http://ldh.la.gov/index.cfm/page/B286BC4B-C13E-6DD5-E93F7E751A9814E3.

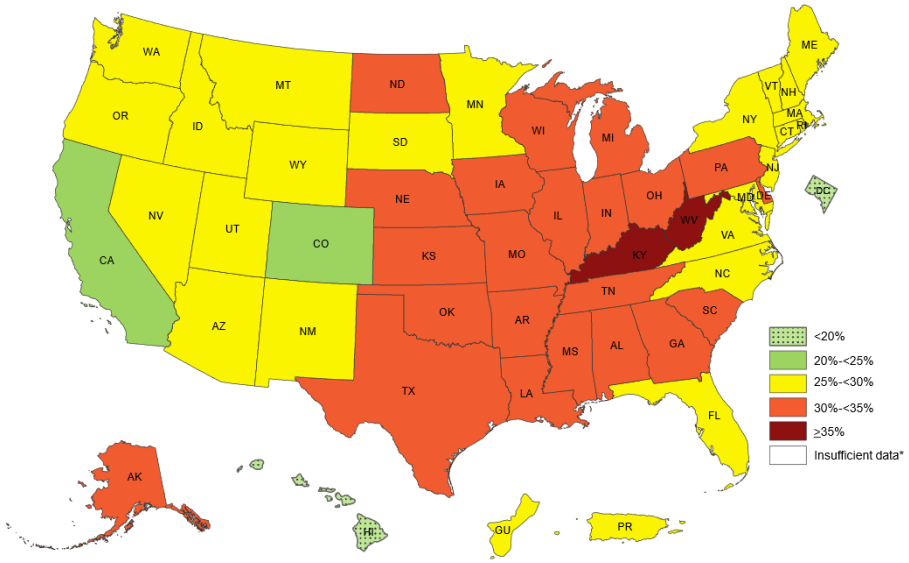
2019 Workshops:

October 23 - Bossier City
October 24 – Lafayette
October 29 – Metairie

Obesity Prevalence Rates in Louisiana

Each year CDC releases the Adult Obesity Prevalence Maps for all 50 states, the District of Columbia, and US territories. The maps show self-reported adult obesity prevalence by race, ethnicity, and location. The data comes from the Behavioral Risk Factor Surveillance System (BRFSS). Data is collected using an on-going state-based, telephone interview survey conducted by CDC and state health departments.

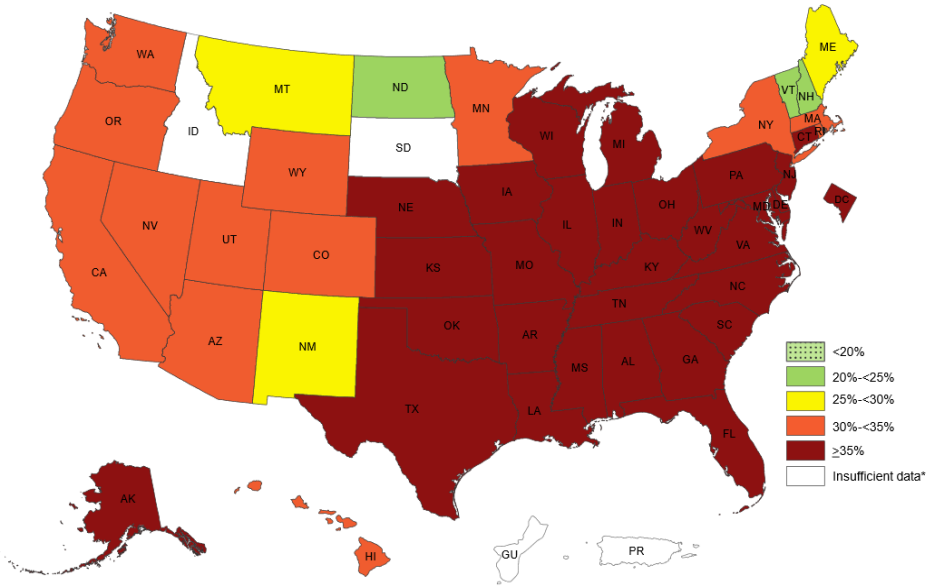
Figure 1: Obesity Prevalence among Non-Hispanic White Adults



From 2016 to 2018 two states reported an obesity prevalence of 35 percent or higher among non-Hispanic white adults (Figure 1) while nine states reported an obesity prevalence of 35 percent or higher among Hispanic adults (not shown).

Among non-Hispanic black adults, twenty-nine states and the District of Columbia reported an obesity prevalence of 35 percent or higher (Figure 2).

Figure 2: Obesity Prevalence among Non-Hispanic Black Adults



To learn more about CDC's Behavioral Risk Factor Surveillance System visit *https://www.cdc.gov/brfss/index.html.*

Table 1. Communicable Disease Surveillance, Incidence by Region and Time Period, July-August, 2019

DISEASE		HEALTH REGION 1	2	3	4	5	6	7	8	9	TIME PERIOD Jul-Aug 2019	Jul-Aug 2018	Jan-Aug Cum 2019	Jan-Aug Cum 2018	Jan-Aug % Chg*
Vaccine-preventable															
Hepatitis B Acute[3]	Cases	1	0	3	0	1	2	0	0	5	12	12	46	31	48.4%
	Rate[1]	0.1	0.0	0.8	0.0	0.4	0.7	0.0	0.0	1.3	0.3	0.3	1.1	0.7	NA*
Measles (rubeola)[4]		0	0	0	0	0	0	0	0	0	0	0	0	2	NA*
Mumps[4]		0	1	0	0	0	9	0	0	0	10	8	168	15	1020.0%
Rubella[3]		0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Pertussis[4]		3	1	2	1	1	0	1	0	1	10	28	61	95	-35.8%
Sexually-transmitted															
HIV/AIDS	Cases[2]	49	38	7	18	11	11	26	5	18	183	162	705	675	4.4%
	Rate[1]	5.5	5.6	1.8	3.0	3.6	3.7	4.8	1.4	3.1	3.9	3.5	15.1	14.5	NA*
Chlamydia	Cases	1494	953	487	684	307	374	978	604	592	6474	6777	24360	24796	-1.8%
	Rate[1]	165.7	139.0	121.3	112.4	101.2	122.8	180.4	171.4	101.4	138.2	144.7	520.0	529.3	0.0
Gonorrhea	Cases	521	368	149	243	136	148	419	245	174	2403	2227	8358	7926	5.5%
	Rate[1]	57.8	53.7	37.1	39.9	44.8	48.6	77.3	69.5	29.8	51.3	47.5	178.4	169.2	0.1
Syphilis (P&S)	Cases	24	28	8	6	3	9	5	9	8	99	146	405	444	-8.8%
	Rate[1]	6.0	4.1	2.0	1.0	1.0	3.0	0.9	2.6	1.4	2.1	3.1	8.6	9.5	N/A
Enteric															
Campylobacter[4]		15	24	1	54	14	17	10	16	14	165	161	615	528	16.5%
Hepatitis A[3]	Cases	8	52	12	14	3	1	2	30	52	174	10	478	15	3086.7%
	Rate[1]	0.8	9.2	3.2	2.7	1.1	0.3	0.4	8.5	13.5	4.0	0.2	11.1	0.3	30.9%
Salmonella[4]	Cases	42	57	27	58	25	26	20	48	47	350	282	775	697	11.2%
	Rate[1]	4.0	10.0	7.2	11.2	9.3	8.5	4.0	13.7	12.2	8.1	6.5	18.0	16.2	NA*
Shigella[4]	Cases	20	25	0	49	1	7	2	8	19	131	34	293	148	98.0%
	Rate[1]	1.9	4.4	0.0	9.5	0.4	2.3	0.4	2.3	4.9	3.0	0.8	6.8	3.4	NA*
Vibrio cholera[3]		0	0	0	0	0	0	0	0	0	0	0	0	1	NA*
Vibrio, other[4]		3	3	3	5	2	0	0	2	2	20	29	78	76	NA*
Other															
H. influenzae (invasive)[4]		2	2	0	0	2	0	1	0	0	7	14	56	63	-11.1%
N. Meningitidis (invasive)[4]		0	0	0	0	0	0	0	0	0	0	0	1	0	NA*

1 = Cases Per 100,000

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

3=Confirmed cases

4=Confirmed and Probable cases

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

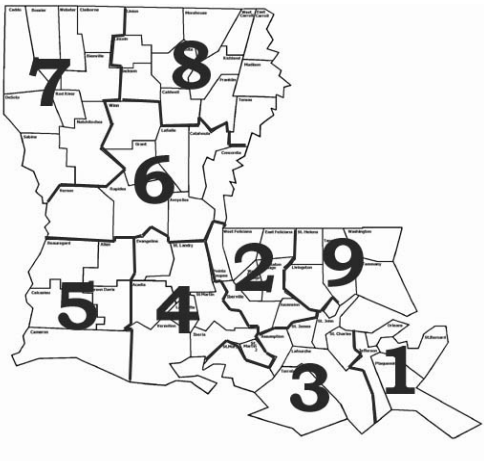
Table 2. Diseases of Low Frequency (January-August, 2019)

Disease	Total to Date
Legionellosis[3]	36
Lyme Disease[4]	6
Malaria[3]	4
Rabies, animal	0
Varicella[4]	49

Table 3. Animal rabies (January-August, 2019

Parish	No. Cases	Species
	0	

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.

- *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.

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.