Louisiana Morbidity Report

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E. coli O157 Outbreak at a School: Louisiana, 2015

Erin Delaune, MPH; Angie Orellana, MPH; Raychel Hebron, MPH

In the spring of 2015, the Infectious Disease Epidemiology Section (IDEpi) of the Office of Public Health, Department of Health and Hospitals investigated an *E. coli* O157:H7 (Shiga toxin 2-producing) outbreak at a school in Louisiana. The school was very concerned and cooperative about notification during the investigation. Fifteen cases were identified, 10 primary cases and 5 cases that were possible secondary cases. Eleven of the cases were laboratory-confirmed *E. coli* O157:H7 (Shiga toxin 2-producing) with matching PFGE patterns. All cases reported abdominal pain, 15 cases reported diarrhea, 13 reported bloody diarrhea, 10 reported vomiting, and 4 reported fever. All cases sought care at either their own primary care provider or at an emergency department. Many sought care at multiple facilities. Twelve cases were hospitalized, and 2 had infections resulting in hemolytic uremic syndrome. All 15 cases had an onset within a 9-day time span.

E. coli O157 is a class B disease, with reporting required to the State within 1 business day. The incubation period of *E. coli* O157 is 3 to 4 days with a range of 1 to 10 days. Because of the long incubation range, all cases could have been exposed around the same time, but there is also the possibility that some with a later onset date were secondary cases.

IDEpi conducted a case control study. Cases were students enrolled at the school that had illness onset between March 20 and 23 (10 cases) and either developed bloody diarrhea or had a positive stool culture for *E. coli* O157 (Figure).

Figure: E. coli O157:H7 Cases by Onset Date: Louisiana - March, 2015

Controls were students enrolled at the school who had no gastro-enteritis during the month of March (10 controls). Controls were matched on sex and grade to the first 10 cases in the outbreak. The average age of cases and controls was 13.9 with a range of 11 to 18 years. Most of the cases were in the seventh grade or higher, with 40% in the seventh grade. Ninety percent of cases were boys. The only differences in demographics between cases and controls were their cities of residence.

A standardized questionnaire was used to ask about exposures commonly associated with *E. coli* O157 infections as well as possible exposure related to the school facility or school activities, and activities occurring apart from the school. Focused questionnaires asked more-detailed questions about possible exposures. Cases were interviewed multiple times using both standardized and focused questionnaires as well as open-ended questions. The controls were given both the standardized and focused questionnaires. Exposure information was analyzed for all 15 cases together and for the 10 cases with an onset date between March 20 and March 23.

The activities reported by the majority of the cases were drinking from the water fountains at school, playing a current sport at school, and being present at the track when preparations were taking place for the track meet. These preparations included replacing the sand in a sand pit. The only exposure with a significant association to becoming ill was drinking from the drinking fountain at school in the week of March 16 to 20. All cases reported drinking from the drinking fountains at school compared to 40% of controls (p value= 0.011). Water samples were collected twice in one week from the school and tested for coliforms at the State Public Health (PH) Laboratory. All samples except one collected from an outside

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Prevention of Perinatal Hepatitis B Transmission

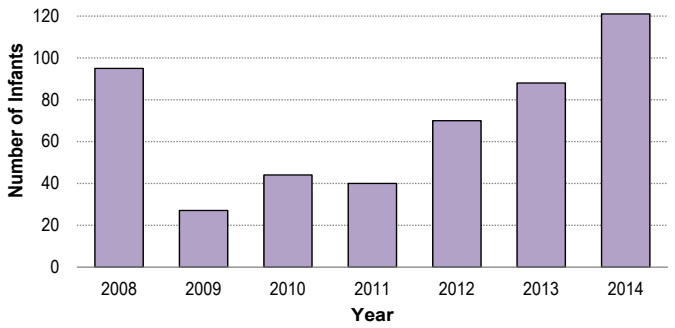
Lyndsey Kirchner, MPH

The Louisiana Office of Public Health's Perinatal Hepatitis B Prevention Program (PHBPP) was initiated in December 1990 with the aims of decreasing and eliminating the transmission of hepatitis B virus (HBV) from mother to child within the state.

The Centers for Disease Control and Prevention (CDC) and the American Congress of Obstetricians and Gynecologists recommend that a woman should be screened for HBV surface antigen (HBsAg) during her first prenatal visit of pregnancy. Additionally, HBsAg screening at labor and delivery is recommended for any woman who has not been previously screened or has unknown/undocumented HBsAg status. It is also recommended that repeat testing be performed for women who are considered to be at high risk of infection. Health care providers, hospitals, and laboratories are required by Louisiana's Sanitary Code LAC 51:II.105 to report all HBsAg-positive pregnant women to the Louisiana Department of Health and Hospitals (DHH) within 1 business day. Timely reporting increases the likelihood that infants exposed to HBV perinatally will receive the appropriate prophylaxis at delivery in addition to the recommended follow-up immunizations.

From 2008 through 2014, a total of 484 infants born to HBsAg-positive mothers were identified and case managed by the PHBPP (Figure 1).

Figure 1: Number of infants born to HBsAg-positive mothers Louisiana, 2008-2014

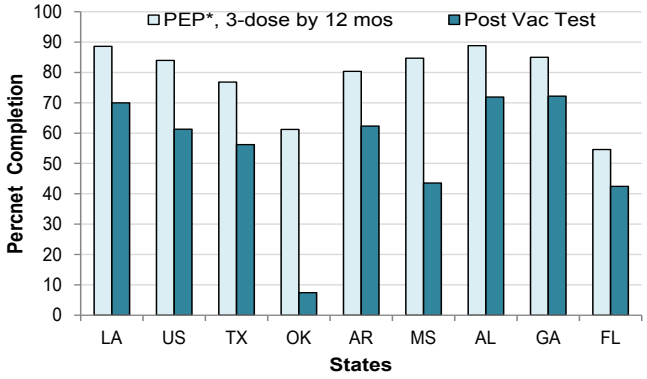


The number of reported infants born to HBsAg-positive mothers has increased in recent years seemingly as a result of improved electronic reporting from various sources, including regional laboratories and local hospitals. The total estimated number of infants born to HBsAg-positive mothers for Louisiana in 2012 was projected to be 308. The PHBPP managed a total of 70 infants, accounting for only 22% of the projected case estimate in 2012. Unfortunately, many providers do not report positive HBsAg laboratory results to DHH, resulting in significant delays in the recognition of infants susceptible to infection at birth. This delay may result in the infant not receiving timely immunoprophylaxis for hepatitis B.

Louisiana follows the CDC's recommendations and guidelines for the elimination of perinatal hepatitis B among infants born to HBsAg-positive mothers by implementing the following multifaceted approach: timely reporting of all HBsAg-positive pregnant females; ensuring the infant receives both hepatitis B immune globulin (HBIG) and hepatitis B vaccine within 12 hours of birth; completing the full hepatitis B vaccine series by 6 months of age; and testing the infant for HBsAg and antibody to HBsAg after completion of the vaccine series at 9 to 18 months of age. Infants are followed and case managed from birth until post vaccine serology testing has been completed. Titers are especially important for these infants to ensure successful immunity to hepatitis B.

In 2012, Louisiana ranked close to other south central states, with 89% of affected infants enrolled in the program completing post-exposure prophylaxis and the three-dose hepatitis B vaccine series by 12 months of age (Figure 2).

Figure 2: Perinatal hepatitis B prevention indicators for infants born in 2012: southern states vs United States



**PEP = HBIG + 1st dose hepatitis B vaccine within 12 hours of birth.*

Louisiana is above the national average for infants that complete the three-dose series within this time frame. In 2013, 98% of infants born to HBsAg-positive mothers received both HBIG and their first doses of hepatitis B vaccine before discharge from the hospital. Additionally, 92% of those infants also completed the three-dose vaccine series by 12 months of age.

In contrast to our success in administering vaccination, only 70% of the infants who received proper post-exposure prophylaxis at birth received post-vaccination serologic testing in 2012.

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Prevention of Perinatal ... continued from page 2)
Although the PHBPP has achieved a rate greater than the national average of 61%, it strives to continue to improve this outcome. PHBPP has found that many pediatric providers are not aware of the HBV vaccination testing protocol for these high-risk infants. Post-vaccine serologic testing should include testing for HBsAg and anti-HBs at 9 to 18 months of age in order to determine if the infant has received adequate immunity from the vaccine series. Efforts to improve this outcome include increasing awareness for both parents and pediatric providers on the importance of timely hepatitis B vaccine series completion and post-vaccination serologic testing.

All pregnant women identified as HBsAg-positive should be reported to the Office of Public Health's Immunization Program at (504) 838-5300 or the Louisiana PHBPP website at *https://linksweb.oph.dhh.louisiana.gov/linksweb/LINKS_DCNTR.html*.

For references or more information please contact Lyndsey Kirchner at *Lyndsey.Kirchner@la.gov*.

Campylobacter - Chicken That Sickens: Louisiana, 2014

Dustin P. Baker, MPH Candidate

Campylobacter is one of the most-common bacterial causes of diarrheal illness in developed and developing countries throughout the world according to the Centers for Disease Control and Prevention (CDC). While most individuals are well aware of some pathogens, such as *E.Coli* and *Salmonella*, *Campylobacter* is not as commonly mentioned as other gastrointestinal illnesses.

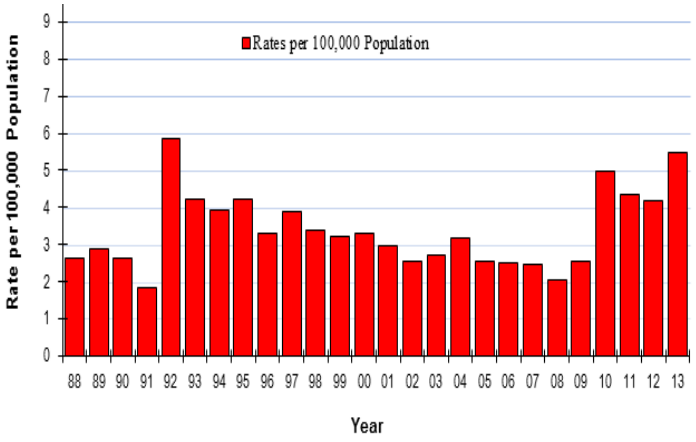
Incidence

According to the CDC, the annual incidence rate of *Campylobacter* is approximately 14 per 100,000 individuals in the United States. Due to the relatively mild nature of most *Campylobacter* infections, the CDC estimates that for every reported case, 30 cases go unreported. Most infections are characterized by fever, nausea, vomiting, and diarrhea. Symptoms usually last 2 to 5 days but may last as long as 10 days.

Reporting of Campylobacteriosis in Louisiana began in 1988. It is a class C disease and must be reported to the state within 5 business days.

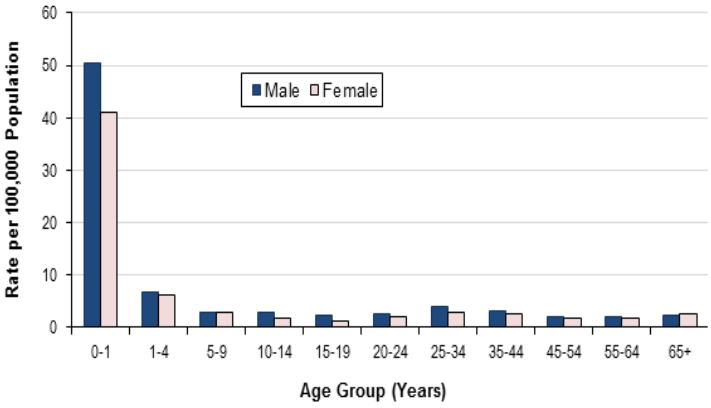
Its peak annual incidence in Louisiana occurred in 1992, with rates gradually declining until about 2010 (Figure 1).

Figure 1: *Campylobacter* cases and incidence rates
Louisiana, 1988-2013



The highest rates of infection occur in infants and children younger than 1 year of age. The markedly higher rate of reported cases in this age group can likely be attributed to cross-contamination during feeding as well as reporting bias, as parents are often more likely to seek medical attention and submit stool samples for infants and young children (Figure 2).

Figure 2: *Campylobacter* incidence rates by gender and age
Louisiana, 1988-2013



Based on CDC estimates extrapolated to population rates in Louisiana, there are about 22,000 *Campylobacter* infections occurring every year within the state. Of these infections, 80%, or about 17,500 cases, are foodborne. Of the annually reported cases, about 100 require hospitalization, with no deaths to a few deaths per year. In 2014, there were 267 cases of *Campylobacter* infection in Louisiana.

Reservoir

Farm animals, such as poultry, swine, and cattle, are the most common reservoir for *Campylobacter*. It is estimated that more than half of the raw chicken available for sale in the United States contains *Campylobacter.* Contaminated water and unpasteurized milk may also act as sources of exposure in humans and animals. The most-common route of exposure to *Campylobacter* is through the handling of raw or undercooked poultry. Cross-contamination often occurs through the washing of raw meat or through the utilization of cutting boards.

Other common sources of *Campylobacter* infection include animals, such as dogs, cats, pigs, sheep, and domesticated rodents, as well as water fowl and other birds. Contact with the feces of these animals may lead to infection, although it is estimated that only 5% of *Campylobacter* infections are a result of this transmission route. Person-to-person transmission of *Campylobacter* is rare but possible, especially if individuals are very young, or very old, or producing a large volume of diarrhea.

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Campylobacter ... continued from page 2)

Sequelae

Although extremely rare, more serious side effects may be experienced in individuals infected with Campylobacter, especially in those who are immunosuppressed. Guillan-Barre Syndrome, which causes weakness and tingling in the limbs that can increase in intensity and progress to partial or full paralysis; reactive arthritis, also called Reiter's arthritis, which causes swelling and pains in joints; and Post-Infectious Irritable Bowel Syndrome (PI-IBS), the symptoms of which may arise months after the initial infection and last for years, are all sequelae of Campylobacter.

Identification

There are about 20 species of *Campylobacter,* and each species can be divided into multiple subspecies with differing molecular characteristics between and within clusters. While different and often multiple species of *Campylobacter* may colonize the same host, certain species are more-commonly associated with corresponding hosts (Figure 3).

Figure 3. Most common *Campylobacter* species and associated hosts

***Campylobacter* Species**	**Host**
C. jejuni	Poultry and Dairy Products
C. coli	Swine
C. lari	Water Fowl
C. upsaliensis	Dogs and Cats
C. fetus	Cattle

Intervention

Consumers play the largest role in preventing human infection of *Campylobacter.*

Thoroughly cooking any raw poultry product is the most effective measure that can be taken in preventing contamination and infection. Utilization of a meat thermometer will ensure that the poultry is cooked to the proper temperature. Chicken must be cooked to an internal temperature of at least 165°F (75°C). When handling raw meat, washing hands, cutting-boards, and any utensils with hot water and soap will help to prevent any cross contamination that may otherwise occur. Thawing of frozen poultry should take place in the refrigerator in a sealed or covered container that will prevent dripping. If poultry needs to be thawed quickly, a microwave is recommended.

For more information on food or water borne disease, go to http://new.dhh.louisiana.gov/index.cfm/page/535 or contact Erin Delaune at (504) 568-8316 or erin.delaune@la.gov.

Announcements

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

Annual Reports: Plague; Several Year Comparison 2013-2015

Events: Pertussis Health Alert

Foodborne/Waterborne: Foodborne Infection, Prevention, and Investigation Manual

Influenza: Updated Information and Guidelines for Evaluation of Patients for MERS-CoV (CDC); Weekly Report

West Nile Virus and **Veterinary**: Dead Bird Reporting

NHSN Validation Program Louisiana, 2015

Erica Washington, MPH

The Healthcare-Associated Infections (HAI) Program administered by the Infectious Disease Epidemiology (IDEpi) Section, Office of Public Heath, Department of Health and Hospitals is currently conducting validations of 2013 central line-associated bloodstream infections (CLABSI) numerator data for acute care hospitals that report infection measures to the National Healthcare Safety Network (NHSN). Seven hospitals have participated in the current validation study to date. The purposes of completing the validation of medical records are to monitor HAIs and the impact of an individual facility's prevention efforts and to benchmark facility performance against risk-adjusted national data.

Methodology for the CLABSI validations is taken from the Centers for Disease Control and Prevention (CDC) 2013 CLABSI Validation Toolkit. Hospitals that choose to participate are asked to submit a line list of their positive ICU blood cultures for 2013. Both targeted and random records are selected based on an algorithm given in the CDC Validation Toolkit. Upon chart selections, a face-to-face meeting is held with infection preventionists by IDEpi to assess correctness of infection identification. Meeting follow-up includes a final report containing information on the sensitivity and specificity of CLABSI infection data.

All data reviewed with IDEpi is confidential. No data from the CLABSI validation study, including the names of participating hospitals, are disclosed to the public. The purpose of this assessment is to identify educational needs with respect to NHSN definitions and infection prevention competencies. To review the full CLABSI Validation Toolkit, visit www.cdc.gov/nhsn. Contact Erica Washington, HAI coordinator, at (504) 568-8319 or erica.washington@la.gov to participate in the 2013 validation study. Future validation measures will be conducted at the end of 2015 and will include CAUTI numerator and denominator data and CLABSI denominator data.

Infectious Disease Epidemiology Workshop

Chalmette - July 16, 2015 Sulphur - August 13, 2015

Winnsboro - September 17, 2015

Sponsored by the Department of Health and Hospitals Office of Public Health, the Infectious Disease Epidemiology Section will hold 3 one-day trainings for non-Infectious Disease Rapid Response Team members. This training is targeted towards sanitarians, public health nurses, infection control professionals, disease surveillance specialists, teachers, epidemiologists, health care providers, and other public health care professionals interested in epidemiological principles and outbreak investigations.

The workshops are free to attend and open to the public, but must be registered for to assure seating availability. Both nurse and sanitarian education credits are available. Go to dhh.louisiana.gov/index.cfm/page/1816 for a registration form and more information.

Tuberculosis Rate Cut Nearly in Half from 2010 to 2014 in Louisiana

Louis Trachtman, MD, MPH; Charles DeGraw, BA

The Louisiana Department of Health and Hospitals' (DHH), Office of Public Health's (OPH) Tuberculosis (TB) Control Program has received a new ranking that places Louisiana below the national average in tuberculosis cases. The Centers for Disease Control and Prevention (CDC) ranking demonstrates the significant progress the program has made over the past 5 years. The TB Control Program has also reduced Louisana's tuberculosis morbidity rate to below the national case rate for the first time since 2000.

Though many states experienced increases in their TB case rates, in 2014 Louisiana's TB case rate was 2.6 per 100,000 population, a 41% reduction from the 2010 case rate of 4.4 per 100,000. Last year, Louisiana moved to 12% below the national case rate. In 2010, only 8 states had higher case rates than Louisiana. By 2014 that numbered doubled, with 16 states having higher case rates than Louisiana.

The new ranking came on the heels of World TB Day, which is recognized each year on March 24. This annual event provides the opportunity to raise awareness about TB-related problems and solutions to support TB-control efforts.

Tuberculosis is an infectious disease caused by the bacterium, *Mycobacterium tuberculosis*. The bacteria causes tubercules and lesions throughout the body, particularly in the lungs. *M.tuberculosis* is transmitted mostly by droplets emitted during coughing. Most peple who are infected do not develop the disease; for 100 LTBI (people with latent TB infections) only five will develop the disease in their lifetime.

The most-effective prevention is to treat any case of pulmonary TB who cough out the bacteria. For this reason, OPH treats all TB cases. There has been a huge progress made since the early days of streptomycin (1946) and isonicotinic acid hydrazide (1952, INH) treatment, which lasted for 18 to 24 months. With the advent of riframpin and its powerful combination with INH and pyrazinamide (PZA), treatment can be shortened to 6 months in most cases.

The other preventive measure is to keep LTBIs from developing disease, particularly amoing HIV infected people. For LTBIs, adherence to the long treatment of 6 to 9 months of INH was poor.

In 2010, the test used to diagnose LTBI was the Mantoux test using purified protein derivative of tuberculin injected into the skin. This test, developed in 1907, was not accurate and gave numerous false results. Thus, because of the poor performance of the diagnostic test and the length of treament, preventing LTBI infected people from developing TB was difficult.

In 2010, the TB Control Program adopted 2 new tools: T-SPOT.*TB*, a blood assay developed to improve the diagnosis of TB infection, and 3HRp*, a short-course therapy used to prevent the development of TB disease. The adoption of these new tools has also reduced the percentage of TB cases with HIV infection. From 1993 to 2010, the average percentage of TB cases with HIV in Louisiana was 10%. The percentage of TB cases with HIV was reduced to 4.1% in 2014, a 59% total reduction in 5 years. The national percentage of TB cases with HIV was 6.0% in 2010 and 6.5% in 2014.

For more information on the TB Control Program, go to *http://dhh.louisiana.gov/index.cfm/page/1005* or contact Charles DeGraw at (504)568-5015 or *charles.degraw@la.gov*.

** INH and Rifapentine once weekly for 12 doses*

Infectious Disease Rapid Response Team May 13, 2015 - Lafayette, Louisiana

Raychel Hebron, an epdiemiologist with the Department of Health and Hospitals' Infectious Disease Section, presents foodborne disease scenarios to members of the Infectious Disease Rapid Response Team from the central-western Louisiana parishes.

Team members act together to investigate suspected or reported outberaks in the community.

IDEpi Question/Answer Corner

On a certain day, an employee at a business had a fever and diarrhea while at work. Later that week the employee was hospitalized and diagnosed with C. difficile.

The office where the employee worked was closed for intense cleaning. The business is very concerned about exposure to the other employees. What is an appropriate response in a case like this?

Three percent of the population are carriers of *C. difficile*. A carrier is infected with the bacteria but displays no symptoms. There is absolutely NO SCIENTIFIC REASON to do anything besides cleaning and then disinfecting the area where the employee defecated.

For more information on *C. difficile* please go to *http://new.dhh.louisiana.gov/index.cfm/page/531*.

E. coli ... continued from page 1)
hose were negative for coliforms.

Conclusions and Discussion:

This is considered a confirmed outbreak of *E. coli* O157, (Shiga toxin 2-producing) among students at a school in Louisiana. Cases resided in 7 different towns, which provided a mix of rural and urban environments. There were no reported cases of *E. coli* O157 among staff, teachers, or other children or adults in the community. No common restaurants or functions outside of school were reported among the cases, and most cases reported no exposure to farm animals. Restaurants, food in the community, animal contact at home, and common exposures in their own community were ruled out as possible sources of exposure.

The main commonality among all cases was attending the school. Aside from sports events, the school reported no parties, events, or festivals associated with the school in the week before illness onset. The majority of cases reported bringing their own lunch from home, ruling out lunch served at the school.

All cases reported drinking from the water fountains at school, compared to 40% of controls (p value= 0.011). This association may be due to recall bias. Cases were interviewed about drinking from the water fountain in the beginning of the investigation and before any water samples were collected. Controls were interviewed almost two weeks later, after water samples were collected and rumors had spread that the cause of the outbreak was the water from the drinking fountains. When controls answered no to drinking from the water fountains, they may have been saying no to drinking from the fountains currently, even though they were asked about the week of March 16 to 20.

Water testing performed at the school twice within a week's time resulted in no coliforms detected from the fountains. Water jugs are used at baseball games and practice and at track meets to make water available to the students. It was common practice to fill the water jugs with hoses connected to water spigots; however, less than half of cases reported drinking out of the water jugs at any time in the week of March 16-20. All sources of water were tested. If water exposure was the cause of the outbreak, it was temporary.

Although many cases reported participating in school sports, only 40% of all cases and 50% of the original ten cases played one single sport: school baseball. From March 16 to 20, the school hosted 3 baseball games and 1 track meet. Roughly half of the cases and controls reported going to any of the baseball games. There was no association between consuming food (hamburger, hot dog, or chicken) from the concessions stand at any of the games or the track meet and becoming ill. The state of residence for the opposing baseball teams reported no *E. coli* O157 cases or similar illness.

The track meet was held at the school on March 19. Over 60% of cases and controls reported helping set up for the track meet or were at the track when preparations were being made; however, more controls than cases reported helping change out the dirt and sand in the sand pit. Due to a high number of cases being present at the track when the soil and sand from the pit was being moved around, a soil/sand sample from the sand pit was collected for *E. coli* testing at the state public health laboratory. Results from this testing were inconclusive.

According to the Louisiana Department of Wildlife and Fisheries, wild hogs are present in the wooded areas in the town where the school is located. The baseball field is adjacent to a wooded area and has some areas to it that are dirt or mud. Three soil samples were collected at the ball field for *E. coli* testing at the state public health laboratory. One environmental sample showed the presence of *E. coli* (but not *E. coli* O157), indicating that this site had been contaminated by animal feces.

Based on the clustering of cases between March 20 to 23, the most likely cause of this outbreak was a one-time exposure to a very limited group of individuals over a very short time period; however, that one-time exposure could not be identified.

Recommendations:

Specific prevention measures were provided to the school during the investigation. Cleaning guidelines were provided, and it was recommended that continuous cleaning be conducted at the school, especially for high-touch, high-use areas, such as the bathrooms. Information on Shiga toxin-producing *E. coli* was provided to the school, and distribution to all of the parents whose children attend the school was recommended. Even though *E. coli* O157 was not detected in the environmental samples that were collected, the following recommendations were made:

- the water jugs should be filled with water directly from a spigot, not from the hose;
- students should be discouraged from drinking directly from the outside hoses;
- the triple jump and long jump sand pits should be covered when not in use to prevent animals from getting in the sand pits; and
- students handling the soil from around the baseball field should thoroughly wash their hands before leaving the field.

Basic prevention methods were also recommended to reduce the risk of an *E. coli* infection including:

- washing hands often with warm water and soap, particularly after using the bathroom or changing diapers and before preparing or eating food;
- washing hands after contact with animals or their environments at farms, petting zoos, fairs, or even one's own backyard;
- using hand sanitizers (with alcohol), which work well and can replace hand washing if there is no convenient way to wash hands and enough hand sanitizer is used when rubbing all parts of the hands;
- disinfecting contaminated surfaces with household chlorine (bleach-based cleaners), making sure to give chlorine enough time on the surface;
- being careful when washing soiled clothing and linens not to spread the bacteria when loading the soiled items into the washing machine;
- avoiding food or water from sources that may be contaminated;
- cooking meats thoroughly and using a meat thermometer to check that ground beef and meat that has been needle tenderized has been cooked to a temperature of at least 160°F (70°C);
- preventing cross-contamination in food preparation areas by thoroughly washing hands, counters, cutting boards, and utensils after they touch raw meat;
- avoiding raw milk, unpasteurized dairy products, and unpasteurized juices (e.g. fresh apple cider); and
- avoiding swallowing water when swimming or playing in lakes, ponds, streams, swimming pools, and backyard "kiddie" pools.

For more information, please contact Erin Delaune at (504) 568-8316 or erin.delaune@la.gov.

Table: Communicable Disease Surveillance, Incidence by Region and Time Period, March-April, 2015

DISEASE		HEALTH REGION 1	2	3	4	5	6	7	8	9	TIME PERIOD Mar-Apr 2015	Mar-Apr 2014	Jan-Dec Cum 2015	Jan-Dec Cum 2014	Jan-Dec % Chg*
Vaccine-preventable															
Hepatitis B	Cases	1	2	0	2	2	1	0	0	6	14	6	23	16	43.8
	Rate[1]	0.1	0.4	0	0.4	0.7	0.3	0	0	1.6	0.3	0.1	0.5	0.4	NA*
Measles		0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Mumps		0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Rubella		0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Pertussis		1	0	0	0	0	0	2	0	1	4	7	13	23	-43.5
Sexually-transmitted															
HIV/AIDS	Cases[2]	81	49	7	15	9	11	19	13	10	215	257	410	473	-13.3
	Rate[1]	9.7	7.4	1.7	2.6	3.1	3.6	3.5	3.7	1.8	4.7	5.7	9	10.4	NA*
Chlamydia	Cases[1,3]	512	299	173	273	78	102	384	239	117	2,177	3,581	5,526	7,344	-24.8
	Rate[1]	58.1	44.3	42.7	45.8	26.4	33.0	69.9	67.1	20.9	47.1	77.4	119.5	158.8	NA*
Gonorrhea	Cases[1,3]	197	105	49	87	28	29	79	109	38	721	1,013	1,743	2,101	-17.0
	Rate[1]	22.7	15.6	12.1	14.7	9.5	9.3	14.3	30.6	6.9	15.7	21.9	37.7	45.4	NA*
Syphilis (P&S)	Cases[1,3]	17	12	7	10	1	2	11	7	1	68	69	132	140	-5.7
	Rate[1]	2.0	1.8	1.7	1.7	0.3	0.6	2.0	2.0	0.2	1.5	1.5	2.9	3.0	NA*
Enteric															
Campylobacter	Cases	1	7	4	4	5	5	4	5	7	42	26	61	47	29.8
Hepatitis A	Cases	0	0	0	0	0	0	0	0	0	0	1	1	4	NA*
	Rate[1]	0	0	0	0	0	0	0	0	0	0	0	0	0.1	NA*
Salmonella	Cases	16	26	9	25	11	6	6	4	20	123	65	191	155	23.2
	Rate[1]	1.5	4.6	2.4	4.8	4.1	2.0	1.2	1.1	5.2	2.9	1.5	4.4	3.6	NA*
Shigella	Cases	4	1	3	3	0	0	4	5	1	21	22	40	56	-28.6
	Rate[1]	0.4	0.2	0.8	0.6	0	0	0.8	1.4	0.3	0.5	0.5	0.9	1.3	NA*
Vibrio, cholera	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Vibrio, other	Cases	3	4	2	2	0	0	0	0	2	13	6	17	6	183.3
Other															
H. influenzae (other)		3	5	1	1	1	1	2	1	2	17	5	24	18	33.3
N. Meningitidis		0	0	0	0	0	0	0	0	0	0	0	2	3	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.

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

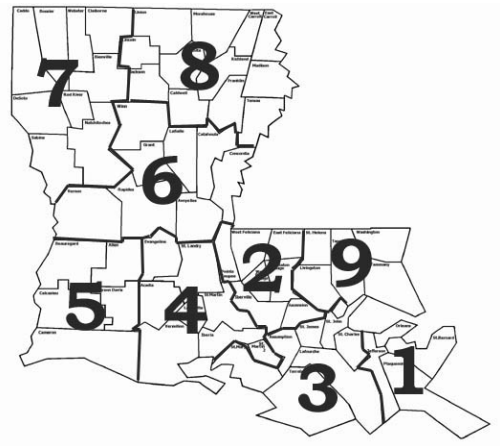
Table 2. Diseases of Low Frequency, January-December, 2015

Disease	Total to Date
Legionellosis	18
Lyme Disease	0
Malaria	1
Rabies, animal	1
Varicella	25

Table 3. Animal Rabies, March-April, 2015

Parish	No. Cases	Species
	0	

Figure: Department of Health and Hospitals Regional Map



Sanitary Code - State of Louisiana
Part II - The Control of Disease

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

Class A Diseases/Conditions - Reporting Required Within 24 Hours

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

- Acute Flaccid Paralysis
- Anthrax
- Avian or novel strain Influenza A (initial detection)
- Botulism
- Brucellosis
- Cholera
- *Clostridium perfringens* (foodborne infection)
- Diphtheria
- Fish/Shellfish Poisoning (Domoic Acid, neurotoxic, Cigueatera, paralytic, Scombroid)
- Foodborne Infection
- *Haemophilus influenzae* (invasive disease)
- Influenza-associated Mortality
- Measles (Rubeola imported or indigenous)
- N*eisseria 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
- 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 Neuroinvasive Disease (West Nile, St, Louis, California, Eastern Equine, Western Equine, others)
- Aseptic Meningitis
- Babesiosis
- Chagas Disease
- Chancroid
- Dengue Fever
- *Escherichia coli*, Shig-toxin producing (STEC), including *E. coli* 0157:H7
- Granuloma Inguinale
- Hantavirus (infection or Pulmonary Syndrome)
- Hemolytic-Uremic Syndrome
- Hepatitis A (acute disease)
- 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 (acute disease)
- Malaria
- Mumps
- Salmonellosis
- Shigellosis
- Syphilis[1]
- Tetanus
- Tuberculosis[3] (*M. tuberculosis, M. bovis, 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
- Cryptosporidiosis
- Cyclosporiasis
- Ehrlichiosis (human granulocytic and monocytic, *Ehrlichia chaffeensis)*
- Enterococcus, Vancomycin Resistant [(VRE), invasive disease]
- Giardia
- Glanders
- Gonorrhea[1] (genital, oral, ophthalmic, pelvic inflammatory disease, rectal)
- Hansen's Disease (leprosy)
- Hepatitis B (carriage, other than in pregnancy)
- Hepatitis C (acute illness)
- Hepatitis C (past or present infection)
- Human Immunodeficiency Virus[2] (HIV (infection other than as in Class B)
- Human T Lymphocyte Virus (HTLV I and II infection)
- Leptospiriosis
- Listeria
- Lyme Disease
- Lymphogranuloma Venereum[1]
- Meliodosis (*Burkholderia pseudomallei)*
- Meningitis, Eosinophilic
- Nipah Virus Infection
- 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 (children)[4] (adults)[5]
- Pesticide-Related Illness or Injury (all ages)[5]
- Phenylketonuria[4]
- Reye's Syndrome
- Severe Traumatic Head Injury
- Severe Undernutrition (severe anemia, failure to thrive)
- Sickle Cell Disease[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 1-800-256-2748 for forms and instructions.

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

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

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

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

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