Louisiana Morbidity Report

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

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

John Bel Edwards
GOVERNOR

Rebekah E. Gee MD MPH
SECRETARY

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Antibiotic Stewardship Program Survey Louisiana, December 1, 2015 - January 14, 2016

Julius Tonzel, MPH; Benjamin Munley, MPH; Andrea Salinas, MPH; Erica Washington, MPH

An antibiotic stewardship program (ASP) survey was sent to all acute care hospitals (ACH) in Louisiana. The purpose of the survey was to assess current practices and capacities relating to antibiotic stewardship. Using the data gathered from the survey, the Department of Health and Hospitals'(DHH) Office of Public Health's (OPH) Infectious Disease Epidemiology Section (IDEpi) will be better equipped to assist with creating and enhancing current ASPs throughout the state.

The survey consisted of a single questionnaire requesting the infection preventionist (IP) or administrator at each ACH to complete the survey with assistance from relevant healthcare professionals at their facility and/or laboratory. Louisiana ACHs that report healthcare-associated infections (HAI) data to the National Healthcare Safety Network (NHSN) per Centers for Medicare and Medicaid (CMS) compliance guidelines and other providers who voluntarily report to NHSN were invited to participate in this survey (n = 94). The questionnaire was distributed via electronic mail, and responses were collected from December 1, 2015, to January 14, 2016. Each ACH was contacted via two phone calls in order to maximize the response rate to the survey.

The first section of the questionnaire requested information relating to current practices, policies, and personnel involved in the facility's ASP. The second section requested detailed information concerning the facility's laboratory infrastructure and relevant practices. The third section requested general information for sterilization/disinfection measures taken at the facility. The last section requested general descriptive information for each facility as well as general information on antimicrobial resistance surveillance practices and reporting.

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Results

Response Rate

Of the 94 facilities invited to participate in this survey, 50 (53.2%) facilities completed surveys (Table 1).

Table 1: The Number of Facilities by Bed Size and by Administrative Region* – Louisiana, December 1, 2015 - January 14, 2016

Number of Patient Beds					Respondent Facilities by Regions (1-9)								
<50	51-200	201-400	>401	Unknown	1	2	3	4	5	6	7	8	9
15%	18%	12%	3%	2%	5%	4%	4%	5%	4%	5%	7%	9%	7%

Of the 50 respondent facilities, 33 (66%) reported having less than 200 patient beds, while 15 (30%) reported having more than 200 patient beds. Two (4%) facilities did not report their bed size. All regions had at least four facilities respond to the survey, with OPH Regions 2, 3, and 5 having the least (n = 4, each) and Region 9 having the most (n = 9).

General ASP Results

Nineteen (38%) facilities reported having a formal, written statement from hospital leadership supporting efforts to improve antibiotic use (Table 2), and approximately six (12%) facilities reported having received financial support for antibiotic stewardship activities.

Table 2: The Number of Facilities Reporting a Professional Involved in Leadership of Their ASP from Various Work Groups - Louisiana, December 1, 2015 - January 14, 2016

Category of Professional	Number of Facilities (n = 40)
Infection Preventionists / Epidemiologists	30 (75%)
Microbiologists	27 (67.5%)
Clinicians	26 (65%)
Quality Control Managers	20 (50%)
Nurses	15 (37.5%)
Information Technologists	13 (32.5%)
None	4 (10%)
Pharmacists	3 (7.5%)

** Map of Regions on Page 7*

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Forty-four (88%) of respondent facilities have a pharmacy leader responsible for working to improve antibiotic use either separately or in collaboration with the facility's ASP. Respondent facilities also reported their 68% of pharmacists acting as clinical pharmacists, 10% as order-entry pharmacists, and 22% as both. Thirty-five (70%) facilities reported policies requiring a physician or pharmacist to review courses of antibiotic therapy. Of these facilities, 14 (40%) reported this review as the responsibility of the pharmacist, one (2.9%) as the responsibility of the physician, and 19 (54.3%) as the responsibility of both the physician and pharmacist. Lastly, 22 (44%) of respondent facilities reported that specific antibiotic agents at their facility required approval by a physician or pharmacist prior to dispensing to patients. Of the 22 facilities that reported such an approval policy, the three classes of antibiotics most regulated were found to be cephalosporins (n = 11), carbapenems (n = 10), and floroquinolones (n = 9). A number of facilities reported such an approval policy for a number of other antibiotic classes as well.

Table 3 shows the number of respondent facilities that reported staff education of antibiotic practices given to each of the professional worker groups at that facility.

Table 3: The Number of Facilities Reporting Staff Education Given to Each of the Clinical Healthcare Worker Groups - Louisiana, December 1, 2015 - January 14, 2016

Category of Professional	Number of Facilities (n = 30)
Physicians	24 (80%)
Pharmacists	23 (76.7%)
Nurses	12 (40%)
Residents	6 (20%)

Overall, 30 (60%) of respondent facilities provide education to clinicians and relevant staff on improving antibiotic prescribing. However, respondent facilities reported focusing education efforts towards physicians and pharmacists while nurses and residents were offered fewer educational opportunities. The frequency of these education efforts varied greatly between facilities from "as needed" to annually. Comparatively, infection control, pharmacy, and microbiology personnel at respondent facilities mostly met either quarterly or monthly to discuss the effectiveness of their ASP.

Clostridium difficile is tracked at 49 (98%) facilities, and Carbapenem-resistant *Enterobacteriacea* (CRE) is tracked at 35 (70%) facilities within their patient populations. The survey showed that 42 (84%) facilities produce an antibiogram report to assist in appropriate prescription practices. However, only 26 (52%) facilities submit those antibiogram reports to OPH annually.

Hospitals were asked if they had any of the following: 1) automatic changes from intravenous to oral antibiotic therapy in appropriate situations; 2) dose adjustments in cases of organ dysfunction; 3) dose optimization to optimize the treatment of organisms with reduced susceptibility; 4) automatic alerts in situations where therapy might be unnecessarily duplicative; and 5) time-sensitive automatic stop orders for specific antibiotics. The number of facilities reporting actions taken to assist in responsible antibiotic prescription and dispensing are in Table 4. Many respondent facilities reported more than one regulatory action in place as well.

Table 4: The Number of Facilities Reporting Various ActionsTaken to Assist in Responsible Antibiotic Prescription and Dispensing – Louisiana, December 1, 2015 - January 14, 2016

Regulatory Practices	Number of Facilities (n = 47)
Automatic Changes	17 (36%)
Dose Adjustments	40 (85%)
Dose Optimizations	30 (64%)
Automatic Alerts	31 (66%)
Time-sensitive Stop Orders	22 (47%)

Laboratory Capacity

The results from the Laboratory Capacity Section showed that 28 (56%) facilities have an attached laboratory to test specimens for identification. For facilities that do not, there was an inconsistent result on the availability of a reference lab for testing. For facilities that use a reference lab (n=23), it usually takes two to three days to obtain results from the time of collection (Table 5).

Table 5: The Average Amount of Time Taken by Reference Laboratories Used by Facilities to Process Specimens and Report Results - Louisiana, December 1, 2015 - January 14, 2016

Average Time of Lab Testing from Specimen Collection	Number of Facilities (n = 36)
≤1 business day	4
2-3 business days	23
4-5 business days	5
>5 business days	4

Hodge's Test is the test most used to identify CRE, whereas polymerase chain reaction (PCR) and toxigenic testing are most used to identify *C. difficile*. There is an established system for alerting infection prevention staff within 24 hours when a CRE isolate is identified by 43 (86%) facilities.

Environmental Cleaning

The Environmental Cleaning section of the survey revealed that 47 (94%) reporting facilities do not use UV technology as part of the terminal cleaning process of patient care areas. The majority of respondent facilities reported special protocols for terminal cleaning of rooms with patients infected with CRE (n=23) and *C. difficile*

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Interim Assistant Secretary OPH ***Beth Scalco***

State Epidemiologist ***Raoult Ratard, MD, MPH***

Editors ***Theresa Sokol, MPH***
Julie Hand, MSPH
Rosemarie Robertson, BS, MT(C), CNMT

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(n=48). Also, 48 (96%) facilities reported the environmental service personnel are monitored to ensure adherence to appropriate terminal cleaning procedures.

Demographics

The number of full-time infection prevention staff employed at the facilities ranged from zero to six. There were two facilities that reported fulltime employees that did infection prevention 25% or 50% of the time. The six most commonly treated cases in all reporting facilities were cellulitis/wounds (78%), urinary tract infections (60%), respiratory infections (48%), surgical site infections (18%), blood stream infections (16%), and sepsis (10%).

Discussion

This survey attempted to measure a baseline in Louisiana with regards to existing ASPs in hospitals across the state. The information gathered is critical to moving forward with responsible antibiotic usage and is intended to help guide the creation and improvement efforts of ASPs over the next year throughout Louisiana.

A main issue this survey revealed is that many facilities in Louisiana lack support from hospital leadership for ASPs, both in written and financial forms. According to the results, less than half of respondent facilities had an ASP with written support from leadership. Even fewer facilities had some form of financial support for their ASP. Without formal support, whether it be in the form of writing or funding, the responsibility of creating and coordinating an ASP falls squarely on health professionals who already have existing responsibilities. While obtaining written support may only present a small obstacle, securing adequate financial resources to grow an ASP at a facility may prove to be more challenging. However, ASPs have been shown at several facilities to reduce expenditures on patient treatment and infection prevention in the long-term. This may be a key selling point to present to hospital budgeting committees in order to leverage the necessary resources to ensure a concerted, effective ASP. For these reasons, one of the simplest and easiest ways of improving any facility's ASP is to help the facility obtain formal support from hospital leadership. For those facilities which do not currently have any ASP, establishing a formal, autonomous ASP should be among the facility's primary goals.

The survey also underlined the healthy combination of professionals that contribute to ASPs. Pharmacists and nurses in particular play central roles in dispensing, administering, and regulating antibiotics at most facilities. In fact, a vast majority of respondent facilities reported that pharmacists have roles in improving antibiotic usage, acting as clinical pharmacists, and reviewing courses in antibiotic therapy. Many facilities also reported pharmacists working with clinicians to approve and review antibiotic therapies, including some of the most controlled antibiotic classes, like cephalosporins, carbapenems, and floroquinolones. Despite all this collaboration between pharmacists and clinicians, only three (7.5%) facilities reported pharmacists having a leadership role in their ASPs. Nurses were also a large group of health professionals that were reported as central to administering and regulating antibiotic therapies, but were only reported by 15 (37.5%) facilities to have leadership in ASPs. Because of their proximity to the entire antibiotic therapy process and the responsibilities many facilities already entrust to pharmacists and nurses, both could prove to be invaluable resources if utilized in ASP leadership roles.

Relatedly, many facilities reported an unbalanced mix of professionals who receive education on antibiotic practices. While several facilities reported no educational opportunities concerning antibiotic practices, the facilities which did report such opportunities tended to focus heavily on physicians and pharmacists. Among the professions that received the least opportunity for antibiotic education were medical residents and nurses, suggesting that ASPs could be improved by simply including more relevant staff in their antibiotic stewardship educational offerings. The wide range in how often educational opportunities are offered also suggests that many ASPs could be improved by conducting regular monthly or quarterly education to relevant staff, both to keep the relevant professionals up-to-date on the latest antibiotic stewardship practices and to reinforce knowledge essential to responsible antibiotic stewardship.

The survey revealed that many facilities have already implemented important antibiotic regulatory practices key to responsible antibiotic prescription and efficacy. Of note, most facilities are already adjusting dose amounts in situations of organ dysfunction and optimizing the doses for the treatment of organisms with reduced susceptibility. Other important practices that could improve ASPs are automatically changing from intravenous to oral antibiotics when needed and having time-sensitive stop orders put in place for specific antibiotic prescriptions.

Another positive finding of the survey was the number of facilities that perform surveillance and reporting necessary to effective antibiotic stewardship. While currently the majority of facilities track *C. difficile* and CRE rates within their patient populations, it should be possible to get all ACHs in Louisiana to track these important infections in their facilities and patients. An area of improvement revealed by the survey was the relatively low number of hospitals (n=26) which submit their annual antibiograms to OPH even though the majority of facilities produce an antibiogram (n=42). Both of these goals should be targeted as easily obtainable improvements of ASPs.

The survey revealed that most measures of laboratory performance were adequate for meeting the demand and needs of facilities. While just over half of the respondent facilities reported having an attached laboratory, those which did not reported only two to three days taken by reference laboratories to process specimens and report the results to the ordering facility. However, a qualitative interpretation of the survey results revealed that many facilities' infection control staffs are unfamiliar with the specific tests and lab protocols relevant to antibiotic stewardship. Efforts to improve staff knowledge on these topics could prove to be beneficial to a number of facilities and make their ASP more efficient.

A key measure to preventing the spread of difficult-to-treat infections is the terminal cleaning of the rooms of patients who were infected. While the majority of facilities reported special protocols for CRE and *C. difficile* patients' rooms, it should be possible to raise these numbers with simple protocol changes at those facilities that currently have no special protocols. Of note, 48 facilities reported the monitoring of environmental service personnel to ensure adherence to appropriate terminal cleaning procedures; if new special protocols are implemented at healthcare facilities to combat CRE and *C. difficile*, it would be key to maintain such a high level of monitoring.

These data correlate with the Centers for Disease Control and Prevention's (CDC) state-based *Prevention Status Report*, released February 29, 2016. According to this report, as of December 2014, 29.5% of acute care hospitals in Louisiana reported having antibiotic stewardship programs that incorporated all seven core elements deemed critical by the CDC. These core elements include the following: 1) leadership commitment, 2) accountability, 3) drug expertise,

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Mardi Gras - Hospital Emergency Department Syndromic Surveillance: Louisiana, 2016

Jenna Iberg Johnson, MSPH

The Department of Health and Hospitals' Infectious Disease Epidemiology (IDEpi) Section conducted enhanced syndromic surveillance in Regions 1, 3 and 9* during the 2016 Mardi Gras activities. Daily summaries of emergency department (ED) chief complaint data were extracted from the Louisiana Early Event Detection System (LEEDS), IDEpi's syndromic surveillance system, to monitor visits indicative of symptoms related to infectious diseases and injuries. Mardi Gras day fell on February 9, 2016; the period of enhanced surveillance took place from January 10, 2016 through February 20, 2016.

* *Map of Regions on Page 7*

IDEpi tracked six syndromes related to infectious disease: fever, gastrointestinal complaints (GI), influenza-like illness (ILI), lower respiratory tract infections (LRTI), skin and soft tissue infections (SSTI), and upper respiratory tract infections (URTI). The data were monitored for spikes and increases in the percentage of ED visits associated with each syndrome. EARS C2 method was used to detect aberrations in the percentage of ED visits attributed to each syndrome. The syndrome aberrations that generated alerts were not sustained and therefore did not warrant investigation (Figures 1, 2 and 3).

Figure 1: Daily Summaries of ED Visits Related to Infectious Disease Syndromes - Region 1: Louisiana, January 10 - February 20, 2016

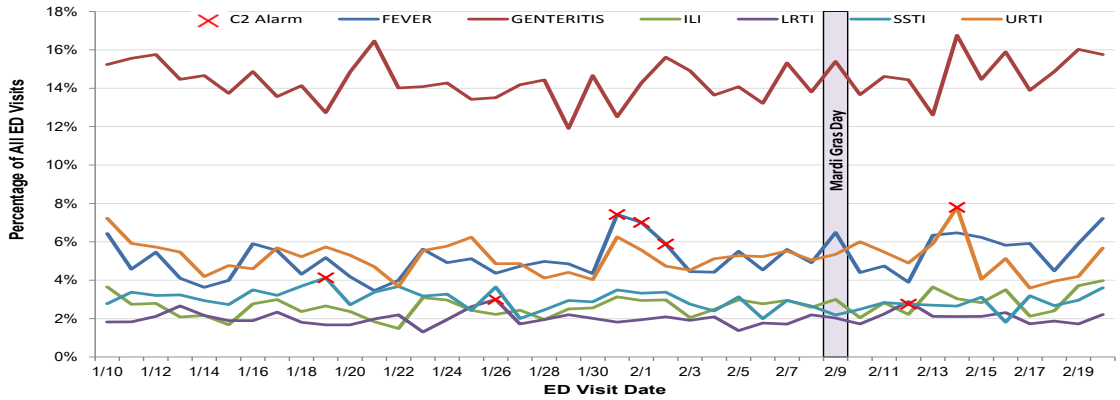


Figure 2: Daily Summaries of ED Visits Related to Infectious Disease Syndromes - Region 3: Louisiana, January 10 - February 20, 2016

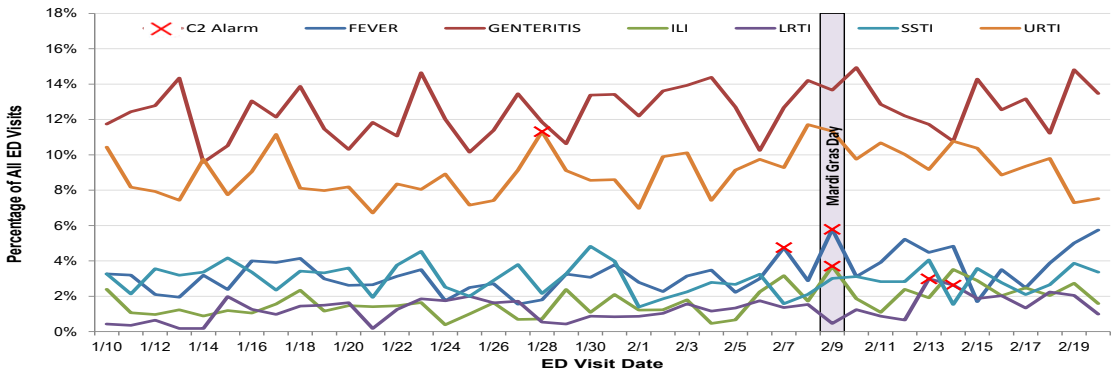
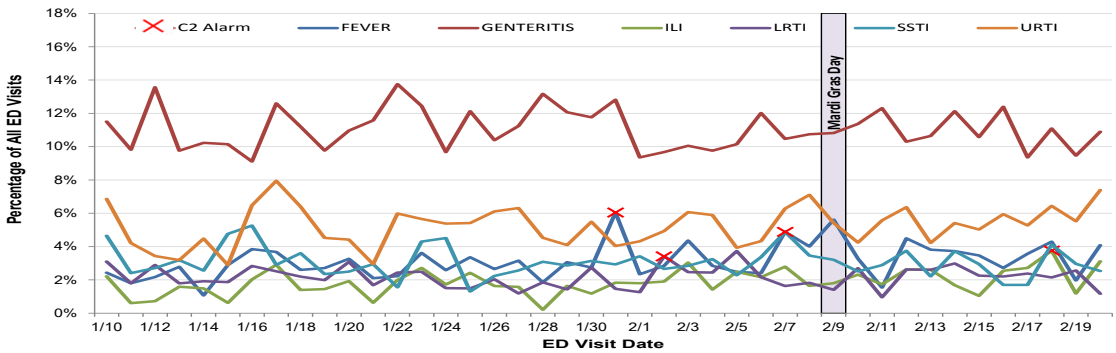


Figure 3: Daily Summaries of ED Visits Related to Infectious Disease Syndromes - Region 9: Louisiana, January 10 - February 20, 2016



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Injury

IDEpi tracked five syndromes related to injuries: visits related to alcohol use, drug use, personal injuries (lacerations, falls, fractures, etc.), motor vehicle accidents (MVA), and violence. Data was monitored for spikes and increases in percentage of ED visits associated with each syndrome. EARS C2 method was used to detect aberrations in the percentage of ED visits attributed to each syndrome. The syndrome aberrations that generated alerts were not sustained and therefore did not warrant investigation (Figures 4, 5 and 6).

Figure 4: Daily Summaries of ED Visits Related to Infectious Disease Injury Syndromes - Region 1: Louisiana, January 10 - February 20, 2016

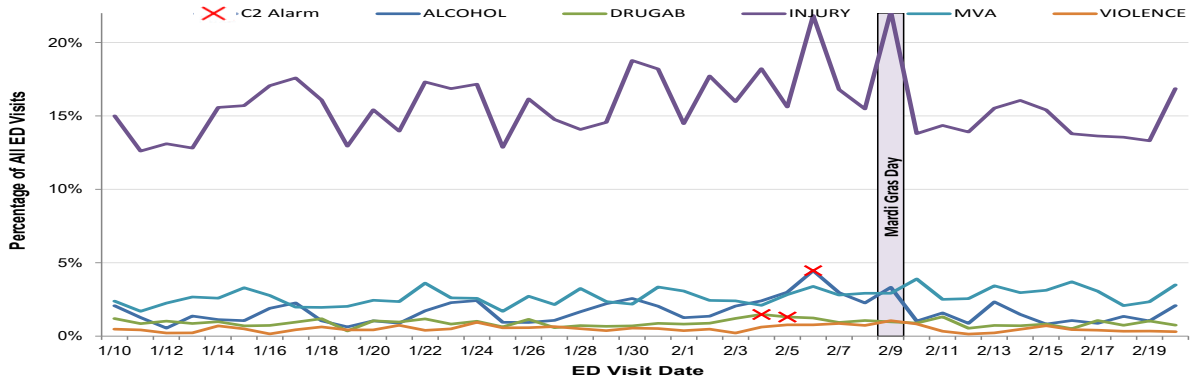


Figure 5: Daily Summaries of ED Visits Related to Infectious Disease Injury Syndromes - Region 3: Louisiana, January 10 - February 20, 2016

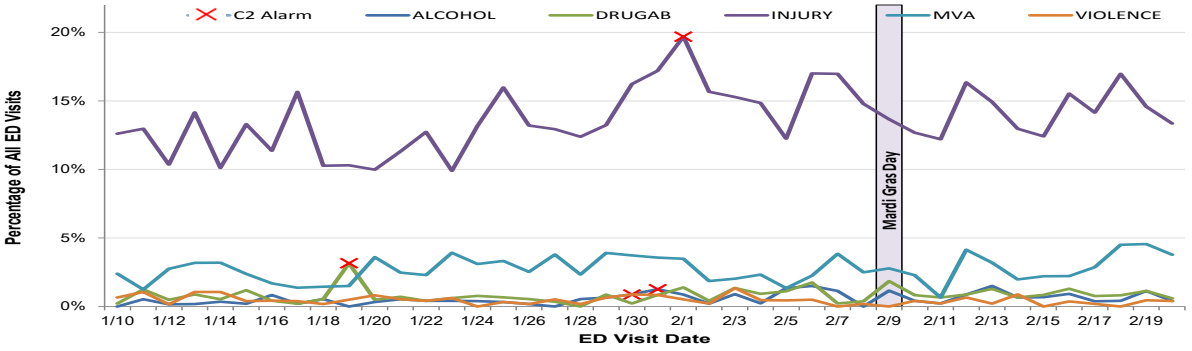
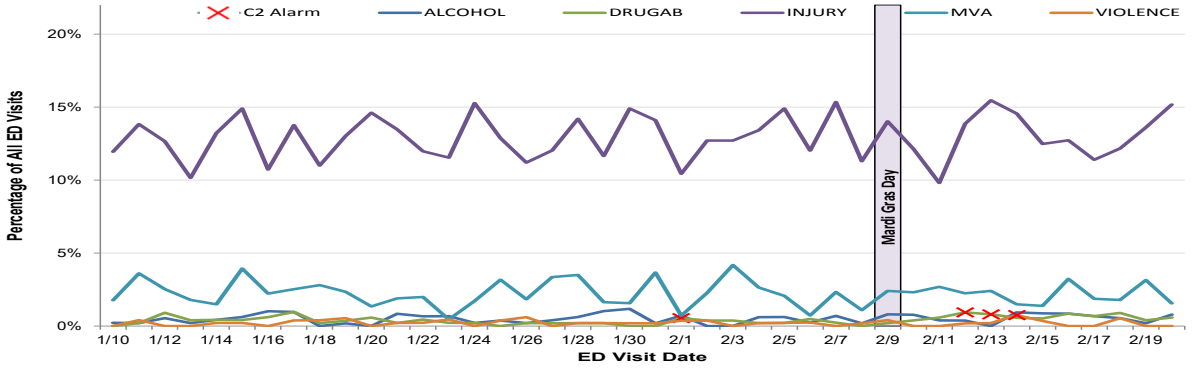


Figure 6: Daily Summaries of ED Visits Related to Infectious Disease Injury Syndromes - Region 9: Louisiana, January 10 - February 20, 2016



IDEpi Question/Answer Corner

Can the Office of Public Health do testing for mold sensitivities?

The Department of Health and Hospitals does not test for mold sensitivities. There are lab tests for invasive fungal infections, but none for exposure. Exposure usually presents in the form of an allergy. The Section of Environmental Epidemiology and Toxicology (SEET) can provide telephone consultations for mold and other indoor air quality concerns.

For more information, please go to *http://new.dhh.louisiana.gov/index.cfm/page/829*.

Zika Sexual Transmission Update

Julius Tonzel, MPH

The Centers for Disease Control and Prevention (CDC) has released updated guidance for pregnancy and preventing sexual transmission of Zika virus.

Zika and Pregnancy

Pregnant women with male sex partners who have lived in or traveled to an area with Zika virus should either use condoms correctly every time that they have vaginal, anal, or oral (mouth-to-penis) sex or not have sex during the pregnancy.

Zika and Couples Who Would Like to Conceive

- Women and men who have been diagnosed with Zika virus or who have symptoms of Zika, including fever, rash, joint pain, or red eyes, after possible exposure to Zika virus are advised as follows:
  - Women should wait **at least eight weeks** after their symtoms first appeared before trying to get pregnant.
  - Men should wait **at least six months** after their symtoms first appeared to have unprotected sex.
- Men and women without symtoms of Zika virus but who have had possible exposure to Zika from recent travel or sexual contact should wait **at least eight weeks** after their possible exposure before trying to get pregnant in order to minimize risk.

Zika and Sexual Transmission

- Couples with men that have confirmed Zika or symptoms of Zika after possible exposure should consider using condoms or not having sex for **at least six months** after symptoms begin.
- Couples with men who have traveled to an area with Zika but did not develop symptoms of Zika should consider using condoms or not having sex for **at least eight weeks** after their return in order to minimize risk.

For more information, please go to *http://www.cdc.gov/zika/pregnancy/index.html*.

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4) actions to improve antibiotic use, 5) tracking antibiotic use and outcomes, 6) reporting antibiotic use and outcomes to staff, and 7) education. The full report is available at *http://wwwn.cdc.gov/psr/?state=Louisiana*.

All members of the healthcare team, from hospital administrators to environmental staff, can play a role in antibiotic stewardship programs and have the potential to reduce the burden of antibiotic resistance, improve patient care and outcomes, and save healthcare dollars.

For more information about antibiotic stewardship, please visit *www.cdc.gov/getsmart*.

Announcements

Healthy and Safe Swimming Week
May 23-29, 2016

Formerly known as *Recreational Water Illness and Injury Prevention Week*, the week before Memorial Day has been designated *National Healthy and Safe Swimming Week*. This year will mark the 12th anniversary of this observance.

The Center for Disease Control and Prevention's theme for this year is "Check out Healthy and Safe Swimming." The website, *http://www.cdc.gov/healthywater/observances/hss-week/index.html*, encourages the public to:

- check the latest inspection results for public pools, water playgrounds, hot tubs/spas, and other venues before swim ming; and
- complete their own simple and short inspection checklist before getting in the water.

National Hepatits Testing Day - May 19, 2016

The Centers for Disease Control and Prevention and others use *Hepatitis Testing Day* as an opportunity to remind health care providers and the public who should be tested for chronic hepatitis and heighten the awareness around hepatitis B & C. The month of May is designated as *Hepatitis Awareness Month* in the United States.

Rapid Response Team/Field Epidemiology Workshop

Bossier City - May 25, 2016; Alexandria -May 26, 2016
Marrero - May 31, 2016; Deridder - July 12, 2016

Sponsored by the Department of Health and Hospitals' Office of Public Health's Infectious Disease Epidemiology Section, this one-day workshop 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.

This workshop is free to attend and open to the public. Registrations are necessary to ensure the availability of both seating and handouts. Sanitarian education credits are available. An application for nurse education credits is pending.

Please go to *dhh.louisiana.gov/index.cfm/page/1816* for a registration form and more information.

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

Annual Reports: Several Year Comparison 2014-2016
Epidemiology Manual: Chikungunya Summary; Dengue Summary; Listeriosis Form (CDC); Water Bacteria
Influenza: Weekly Report

Table: Communicable Disease Surveillance, Incidence by Region and Time Period, January-February, 2016

DISEASE		HEALTH REGION 1	2	3	4	5	6	7	8	9	TIME PERIOD Jan-Feb 2016	Jan-Feb 2015	Jan-Dec Cum 2016	Jan-Dec Cum 2015	Jan-Dec % Chg*
Vaccine-preventable															
Hepatitis B	Cases	0	1	2	0	0	0	1	1	1	6	11	6	11	-45.5
	Rate[1]	0	0.2	0.5	0	0	0	0.2	0.3	0.3	0.1	0.3	0.1	0.3	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		6	2	0	0	0	0	2	0	1	11	9	11	9	NA*
Sexually-transmitted															
HIV/AIDS	Cases[2]	56	42	6	9	4	13	14	11	13	168	161	168	161	4.3
	Rate[1]	6.7	6.3	1.5	1.5	1.4	4.2	2.6	3.1	2.4	3.7	3.6	3.7	3.6	NA*
Chlamydia	Cases[1,3]	1429	758	422	628	279	332	652	520	379	5,399	3,249	5,399	3,249	66.2
	Rate[1]	162.3	112.3	104.3	105.3	94.6	107.5	118.7	145.9	67.8	116.7	70.2	116.7	70.2	NA*
Gonorrhea	Cases[1,3]	510	287	126	186	69	89	174	180	126	1,747	974	1,747	974	79.4
	Rate[1]	57.9	42.5	31.1	31.2	23.4	28.8	31.7	50.5	22.5	37.8	21.1	37.8	21.1	NA*
Syphilis (P&S)	Cases[1,3]	11	21	3	12	2	7	26	9	2	93	69	93	69	34.8
	Rate[1]	1.2	3.1	0.7	2.0	0.7	2.3	4.7	2.5	0.4	2.0	1.5	2.0	1.5	NA*
Enteric															
Campylobacter	Cases	3	2	6	1	3	2	2	0	5	24	19	24	19	26.3
Hepatitis A	Cases	0	2	1	1	0	0	0	0	1	5	1	5	1	NA*
	Rate[1]	0	0.4	0.3	0.2	0	0	0	0	0.3	0.1	0	0.1	0	NA*
Salmonella	Cases	19	13	10	16	10	8	13	3	11	103	69	103	69	49.3
	Rate[1]	1.8	2.3	2.7	3.1	3.7	2.6	2.6	0.9	2.9	2.4	1.6	2.4	1.6	NA*
Shigella	Cases	15	18	2	10	2	1	3	1	5	57	21	57	21	171.4
	Rate[1]	1.4	3.2	0.5	1.9	0.7	0.3	0.6	0.3	1.3	1.3	0.5	1.3	0.5	NA*
Vibrio, cholera	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	NA*
Vibrio, other	Cases	1	0	0	0	0	0	0	0	0	1	4	1	4	NA*
Other															
H. influenzae (other)		1	2	1	1	0	0	1	1	5	12	7	12	7	71.4
N. Meningitidis		0	0	0	0	0	0	0	0	0	0	2	0	2	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.

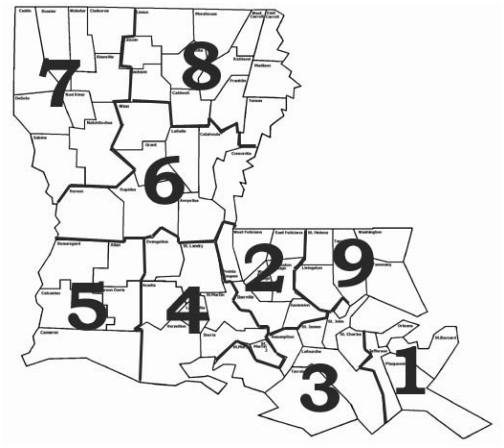
Table 2. Diseases of Low Frequency, January-December, 2016

Disease	Total to Date
Legionellosis	2
Lyme Disease	0
Malaria	2
Rabies, animal	0
Varicella	15

Table 3. Animal Rabies, January-February, 2016

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 shellfish poisoning, ciguatera, paralytic shellfish poisoning, scombroid)
- Foodborne Infection
- *Haemophilus influenzae* (invasive infection)
- Influenza-associated Mortality
- Measles (Rubeola imported or indigenous)
- *Neisseria meningitidis* (invasive infection)
- Outbreaks of Any Infectious Disease
- Pertussis
- Plague (*Yersinia pestis*)
- Poliomyelitis (paralytic & non-paralytic)
- Q Fever (*Coxiella burnetii)*
- Rabies (animal and human)
- Ricin Poisoning
- Rubella (congenital syndrome)
- Rubella (German Measles)
- Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV)
- Smallpox
- *Staphylococcus aureus*, Vancomycin Intermediate or Resistant (VISA/VRSA)
- Staphylococcal Enterotoxin B (SEB) Pulmonary Poisoning
- Tularemia (*Francisella tularensis*)
- Viral Hemorrhagic Fever (Ebola, Lassa, Marburg, Crimean Congo, etc.)
- Yellow Fever

Class B Diseases/Conditions - Reporting Required Within 1 Business Day

Diseases of public health concern needing timely response because of potential of epidemic spread-report by the end of the next business day after the existence of a case, a suspected case, or a positive laboratory result is known.

- Amoeba (free living infection: *Acanthamoeba, Naegleria, Balamuthia,* others)
- Anaplasmosis
- Arthropod-Borne Viral Infections (West Nile, Dengue, St, Louis, California, Eastern Equine, Western Equine, Chikungunya, Usutu, and others)
- Aseptic Meningitis
- Babesiosis
- Chagas Disease
- Chancroid
- *Escherichia coli*, Shiga-toxin producing (STEC), including *E. coli* O157:H7
- Granuloma Inguinale
- Hantavirus (infection or Pulmonary Syndrome)
- Hemolytic-Uremic Syndrome
- Hepatitis A (acute illness)
- Hepatitis B (acute illness and carriage in pregnancy)
- Hepatitis B (perinatal infection)
- Hepatitis E
- Herpes (neonatal)
- Human Immunodeficiency Virus[2] [(HIV), infection in pregnancy]
- Human Immunodeficiency Virus[2] [(HIV), perinatal exposure]
- Legionellosis
- Malaria
- Mumps
- Salmonellosis
- Shigellosis
- Syphilis[1]
- Tetanus
- Tuberculosis[3] (due to *M. tuberculosis*, *M. bovis, or M. africanum*)
- Typhoid Fever

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

Diseases of significant public health concern-report by the end of the workweek after the existence of a case, suspected case, or a positive laboratory result is known.

- Acquired Immune Deficiency Syndrome[3] (AIDS)
- *Anaplasma Phagocytophilum*
- Blastomycosis
- Campylobacteriosis
- Chlamydial infection[1]
- Coccidioidomycosis
- Cryptococcosis (*C. neoformans* and *C. gattii*)
- Cryptosporidiosis
- Cyclosporiasis
- Ehrlichiosis (human granulocytic, human monocytic, *E. chaffeensis* and *E. ewingii)*
- *Enterococcus*, Vancomycin Resistant [(VRE), invasive disease]
- Giardiasis
- Glanders (*Burkholderia mallei*)
- Gonorrhea[1] (genital, oral, ophthalmic, pelvic inflammatory disease, rectal)
- Hansen's Disease (leprosy)
- Hepatitis C (acute illness)
- Histoplasmosis
- Human Immunodeficiency Virus[2] (HIV (infection other than as in Class B)
- Human T Lymphocyte Virus (HTLV I and II infection)
- Leptospirosis
- Listeriosis
- Lyme Disease
- Lymphogranuloma Venereum[1]
- Melioidosis (*Burkholderia pseudomallei)*
- Meningitis, Eosinophilic (including those due to *Angiostrongylus* infection)
- Nipah Virus Infection
- Non-gonococcal Urethritis
- Ophthalmia neonatorum
- Psittacosis
- Spotted Fevers [*Rickettsia* species including Rocky Mountain Spotted Fever (RMSF)]
- *Staphylococcus aureus* (MRSA), invasive infection
- Staphylococcal Toxic Shock Syndrome
- Streptococcal Disease, Group A (invasive disease)
- Streptococcal Disease, Group B (invasive disease)
- Streptococcal Toxic Shock Syndrome
- *Streptococcus pneumoniae*, invasive disease
- Transmissible Spongiform Encephalopathies (Creutzfeldt-Jacob Disease & variants)
- Trichinosis
- Varicella (chickenpox)
- *Vibrio* Infections (other than cholera)
- Yersiniosis

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

- Cancer
- Carbon Monoxide Exposure and/or Poisoning[5]
- Complications of Abortion
- Congenital Hypothyroidism[4]
- Galactosemia[4]
- Heavy Metal (arsenic, cadmium, mercury) Exposure and/or Poisoning (all ages)[5]
- Hemophilia[4]
- Lead Exposure and/or Poisoning (all ages)[4, 5]
- Pesticide-Related Illness or Injury (all ages)[5]
- Phenylketonuria[4]
- Pneumoconiosis (asbestosis, berylliosis, silicosis, byssinosis, etc.)
- Radiation Exposure, Over Normal Limits
- Reye's Syndrome
- Severe Traumatic Head Injury
- Severe Undernutrition (severe anemia, failure to thrive)
- Sickle Cell Disease[4] (newborns)
- Spinal Cord Injury
- Sudden Infant Death Syndrome (SIDS)

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

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

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

[3]Report on form TB 2431 (8/94). Mail form to TB Control Program, DHH-OPH, P.O. Box 60630, New Orleans, LA. 70160-0630 or fax both sides of the form to (504) 568-5016

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

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

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