



Kathleen Babineaux Blanco
GOVERNOR

Louisiana Morbidity Report

Louisiana Office of Public Health - Infectious Disease Epidemiology Section
P.O. Box 60630, New Orleans, LA 70160 (504) 219-4543
www.oph.dhh.state.la.us/infectiousdisease/index.html



Frederick P. Cerise, M.D., M.P.H.
SECRETARY

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Environmental Assessment Summary December 1, 2005

Introduction

Hurricane Katrina made landfall on Monday, August 29, 2005 as a category 4 hurricane. The storm brought heavy winds and rain to Southeast Louisiana, breaching several levees and flooding up to eighty percent of New Orleans and large areas of Plaquemines and St. Bernard Parishes. Much of the area that was flooded in Hurricane Katrina was re-flooded by a storm surge from Hurricane Rita on September 24th. The flooded areas were declared unwatered by the U.S. Army Corps of Engineers (USACE) on October 11, 2005. Sediments ranging in depths from less than an inch to several feet were left behind by the floodwaters in areas impacted by levee overtopping and breaches. However, large portions of the impacted area had little or no sediment deposited.

As local governments and individuals make decisions related to re-entry and habitation, one of the commonly asked questions is the extent to which one should be concerned about environmental contamination of air, land and water resulting from the hurricanes. The following summary is intended to provide a general assessment of the results of sampling to date. It has been developed based upon input from the Centers for Disease Control and Prevention (CDC), the Agency for Toxic Substances and Disease Registry (ATSDR), Louisiana Department of Environmental Quality (LDEQ), Louisiana Department of Health and Hospitals (LDHH), the U.S. Environmental Protection Agency (USEPA), and the Federal Emergency Management Agency (FEMA). This information was developed based on outdoor sampling.

This summary does not include soils and sediments at individual sites, such as the Murphy Refinery oil spill area in St. Bernard Parish, where the site is being addressed by the

responsible party with LDEQ and USEPA oversight. It also does not address indoor environmental issues associated with re-entry into flooded homes and structures.

Environmental Testing and Assessments

Immediately after Hurricane Katrina's landfall, an intensive environmental testing effort began in the impacted areas. An incident management team was assembled with representatives from LDEQ, USEPA, U.S. Coast Guard (USCG), USACE, National Oceanographic and Atmospheric Administration (NOAA), LDHH, U.S. Geological Survey (USGS), and the Louisiana Oil Spill Coordinator's Office (LOSCO) working from a Unified Command Center. The Texas Commission on Environmental Quality also provided several of its Strike Teams to assist. New airborne and remote-sensing technologies were employed to assist with assessing environmental threats. Ground teams began a systematic sampling effort of floodwaters, soils and sediments and air quality. LDEQ and USGS began sampling in Lake Pontchartrain to assess potential impacts of floodwater that was being pumped from New Orleans back into Lake Pontchartrain. NOAA, LDHH, U.S. Food and Drug Administration (FDA) and LDEQ began sampling seafood to determine if any possible contamination resulted from floodwaters.

Floodwaters

Floodwaters from the East Bank Greater New Orleans area have been extensively tested. Nearly 400 water samples were collected by LDEQ and USEPA to represent the flooded areas and the discharges of the floodwater to Lake Pontchartrain. Each of these samples was analyzed for nearly 200 chemicals. Numerous floodwater samples revealed elevated bacteria levels. This would be expected from mixing floodwaters with sewage collection system waters, resulting in unsanitary conditions. Average concentrations of chemicals were below levels of concern for short-term (i.e. 90 days) dermal contact and incidental ingestion. A small number of floodwater samples contained concentrations of chemicals that exceeded the ninety-day exposure levels. However, there was realistically no circumstance that would lead to continuous exposure to floodwaters much beyond a few days. The pump water discharge sampling results were very similar to discharged storm waters sampled from Orleans and Jefferson Parishes from 2001 to 2004. Toxicity testing of the pump water discharge showed no reason for concern for toxicity to aquatic animals or adverse affect on the health of Lake Pontchartrain. Data from over one hundred bacteria samples taken at over fifty stations in the Lake Pontchartrain area

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during September and October by USGS and LDEQ showed very low concentrations in Lake Pontchartrain proper and always within recreational standards. Preliminary results from fish and shellfish samples taken from Lake Pontchartrain and Lake Borgne, as well as the near shore Gulf of Mexico, are below levels which would warrant concern for seafood consumption. FDA stated publicly on October 21 that they do not support a ban on seafood consumption.

Soils and Sediments

What Was The Extent of Soil and Sediment Sampling?

From September 10 through October 14, USEPA collected ground surface samples at 430 sites in the streets and public areas of Jefferson, Orleans, Plaquemines and St. Bernard Parishes. USEPA's sampling procedures specified that efforts were to be made to bias the samples toward areas that were more likely to contain elevated levels of contamination such as areas that contain oily sediment or large stains. Each sample was tested for fecal coliform bacteria and about 200 different chemicals including volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), metals, pesticides, herbicides, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH).

On November 10, LDEQ collected twenty-three samples of sediments from representative areas where sediment depth exceeded a half-inch. Each sediment sample was analyzed for arsenic, lead, PAHs and TPH.

On November 19 and 20, USEPA and LDEQ revisited approximately 145 previous soil/sediment sample locations where contaminant concentrations exceeded LDEQ and USEPA criteria. For re-sampling to occur, the sediment depth had to exceed a depth of 1.5 cm (0.5"). Sediments of sufficient depth were found at fourteen locations and were re-sampled to determine current conditions. Samples were analyzed for the same chemical constituents as was done for the earlier September 10 – October 14 sampling.

USEPA has continued some soil and sediment sampling in the Ninth Ward and areas in St. Bernard Parish with analyses being underway.

What Do The Test Results Show?

September 10 – October 14 Sediment and Soils Sampling:

As expected in a densely populated urban area, a variety of chemicals were detected in soils and sediments. The most frequently detected chemicals included some metals, petroleum hydrocarbons, PAHs (polycyclic aromatic hydrocarbons), and to a lesser extent, pesticides. These levels are similar to the historical levels found in these parishes before Katrina and to other urban areas throughout the nation. The majority of chemicals detected were below levels of health concern. However, there were some localized areas with levels of arsenic, PAHs and diesel and oil range organics that exceeded both LDEQ Risk Evaluation/Corrective Action Program (RECAP) and USEPA's risk criteria (e.g., 10^{-6} to 10^{-4} risk range) based on long-term (30 years) residential exposure assumptions.

The levels of fecal coliform bacteria and petroleum hy-

drocarbons in the soils and sediments also exceeded health screening values. However, these levels are expected to naturally decrease over time.

November 10 Sediment Sampling:

Analytical results indicate that the chemicals tested for are not present in the sediment at levels of concern. Arsenic was found at levels similar to background soil levels. Lead and TPH were found to be present at levels that are below the long-term health-based standard for residential areas with the exception of two locations within the Lakeview area. At one of these locations, lead only slightly exceeded the long-term residential health-based standard and at the other location, diesel range TPH was present at a level twice the long-term residential health-based standard. PAHs were not detected in the sediment with the exception of fluoranthene which was detected at one location in the Ninth Ward at a level that was less than one-sixth of the long-term residential health-based standard.

November 19-20 Sediment Sampling:

In Orleans Parish, three samples contained arsenic above the RECAP value of twelve ppm (Louisiana's accepted background level), with levels ranging from 14.4 to 17.6 ppm. One sample contained benzo(a) pyrene above the RECAP value of 0.33 ppm with a level of 0.77 ppm. Although the levels in these four samples exceed RECAP values, they fall within a risk range of one in 1,000,000 to one in 10,000 risk of an individual developing cancer over a lifetime from exposure to those concentrations, which USEPA has found acceptable in other contexts.

In St. Bernard Parish, one sample contained diesel range organics above the RECAP value of 650 ppm, with a level of 2100 ppm. USEPA and LDEQ believe the diesel range organics value is associated with the Murphy Oil spill. USEPA and LDEQ are working together to determine next steps.

Each sampling location has been geographically referenced and information concerning locations where contaminant levels exceeded risk screening levels will be available from USEPA and LDEQ following completion of confirmatory sampling. If an area is found to pose an unacceptable

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Assistant Secretary, OPH	Sharon Howard, MSW
State Epidemiologist	Raoult Ratard, MD MPH
Editors	Susanne Straif-Bourgeois, PhD MPH Theresa Sokol, MPH Rosemarie Robertson, BS MT(C) CNMT
Layout & Design	Ethel Davis, CST

risk, these agencies will work with FEMA under the NRP to ensure proper removal and disposal under the National Response Plan (NRP).

Landscaping and Gardening

Louisiana State University Agricultural Center scientists recently collected soil and sediment samples from five areas in Jefferson and Orleans Parishes – Kenner, Lakeview, City Park, Mid-City and Old Metairie. Their results indicate that gardeners do not need to worry about soil salinity and heavy metal content in the areas tested. There should be no problem with digging or planting in the soil. Growing vegetables for consumption is not affected and there is no need for special soil treatment before replanting.

What Steps Should You Take?

The great majority of the data available show that adverse health effects would not be expected from exposure to the soils and sediments from the previously flooded areas, provided people use common sense and good personal hygiene and safety practices. However, as noted previously, certain contaminants were detected in localized areas at concentrations higher than background or LDEQ RECAP levels for long-term residential land use. (As a precaution, direct and frequent skin contact with soils and sediments should be avoided to the extent practicable.)

Chemical analysis of airborne particles taken over the past two months by USEPA and LDEQ show concentrations below levels of concern. However, if soils and sediment are dried and stirred-up, they may cause a nuisance dust problem. Breathing in the dust may irritate lungs and cause coughing. For sensitive people, it may also irritate skin and cause rashes. Good personal hygiene should be practiced when working with or near exposed soils or sediments.

- Wear gloves, boots and safety glasses.
- Wear a dust mask (a N-95 dust mask is recommended and can be purchased at your local pharmacy or building supply store).
- Keep arms and legs covered. Wear long sleeves and long pants.
- Wash hands frequently with soap and water.
- Wash work clothes separate from other laundry.

Re-establishing grass or vegetative covers will help control dust in yards. Use simple measures like using a garden hose to rinse off sidewalks and driveways to ensure dust is not tracked into the house. Exposure to dust is expected to decrease over time due to growth of vegetation over exposed soils and residual sediments.

Obvious signs of hazardous materials or oil spillage should be avoided and reported to the appropriate officials. Questions concerning situations at specific residences will need to be addressed on a case by case basis. If you have additional questions you can call toll free 1-888-763-5424 or 1-225-342-1234 (LDEQ) for more information.

Air Quality

- LDEQ and USEPA have conducted extensive air sampling in the area impacted by Hurricane Katrina. This effort includes the following:

- Continuous criteria pollutant monitoring at Kenner for ozone, nitrogen oxides (NO_x), sulfur dioxide (SO₂), hydrogen sulfide (H₂S), carbon monoxide (CO), and particulate matter (PM)
- VOC samples collected in Summa canisters and each canister analyzed for nearly a hundred toxic air pollutants
- The USEPA mobile Trace Atmospheric Gas Analyzer (TAGA)
- USEPA's Airborne Spectral-imagery of Environmental Contaminants Technology (ASPECT)
- Portable VOC and particulate samplers.

All of the results collected to date for ambient air quality samples appear to be typical for this region of the state and are below any levels of health concern. LDEQ and USEPA scientists and toxicologists have studied the data and agree the results meet all federal and state PM standards. A review of PM 2.5 (fine particulate) data shows concentrations below levels of concern. None of the samples have picked up any detectable levels of asbestos fibers or any detectable levels of PAHs.

The VOC samples and TAGA data showed some elevated readings of pollutants immediately after the storm. However, subsequent sampling has shown that the levels of pollutants have returned to pre-Katrina levels. All concentrations of the toxic air pollutants are below the USEPA one year screening levels and below the Louisiana ambient air standards.

As part of the ongoing monitoring plans, LDEQ will replace and enhance the New Orleans area air monitoring sites destroyed by the storm. In addition, USEPA plans to complete installation of nineteen temporary ambient air monitoring sites throughout southeastern Louisiana. Two of the USEPA sites are being configured as National Air Toxics Trend Sites. National Air Toxic Trend Sites will be established and enhanced. These stations are providing long term air quality data that is being posted on USEPA's Hurricane Response web site as it becomes available.

Conclusions

The pump water discharge sampling results were very similar to discharged storm waters sampled from Orleans and Jefferson Parishes from 2001 to 2004. Unwatering of the flooded areas of Orleans, St. Bernard, Jefferson and Plaquemines Parishes has been completed and floodwaters no longer serve as a source of exposure to residents returning to impacted areas.

All of the results collected to date for ambient air quality samples appear to be typical for this region of the state and are below any levels of health concern. The VOC samples and TAGA data showed some elevated reading of pollutants immediately after the storm. However, subsequent sampling has shown that the levels of pollutants have returned to pre-Katrina levels. A review of PM 2.5 (fine particulate) data shows concentrations below levels of concern. All concentrations of the toxic air pollutants are below the USEPA one year screening levels and below the Louisiana ambient air standards.

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In general, the soils and sediments located in areas flooded by the hurricanes in Orleans, St. Bernard and Plaquemines Parishes are not expected to cause adverse health effects provided people use common sense and good personal hygiene and safety practices. The levels of fecal coliform bacteria and TPH in the soils and sediments were initially elevated, but have been decreasing with time. As expected in an old, densely populated urban area, a variety of chemicals were detected in the soils and sediments. In general, other VOCs, SVOCs, pesticides and metals were at levels that would not be expected to result in adverse health effects. However, in areas where soil or sediment samples contained contaminant levels exceeding LDEQ and USEPA criteria, further investigation is underway to adequately characterize the nature and extent of contamination.

As soils and sediments dry out, the fecal coliform bacteria would not be expected to survive and the hazard represented by the bacteria will decrease. The elevated levels of TPH are likely attributable to urban background TPH levels associated with surface runoff from roadways in combination with releases of petroleum products from vehicles submerged under floodwaters. In some localized areas, elevated TPH levels may be attributable to known releases of petroleum products.

Good personal hygiene should be practiced with frequent hand washing, laundering of clothing and cleaning of the homes (i.e. vacuuming, dusting, etc). Efforts should be made to avoid tracking soils and sediments into homes from un-vegetated or uncovered areas, as well as stirring up dust from those same areas. Obvious signs of hazardous material or oil spillage should be avoided and reported as well. It is therefore recommended that efforts be made to minimize contact and take measures to minimize dust (reestablish lawn, rinse off sidewalks and driveways etc).

Exposure to the majority of residual soil and sediment contaminants is expected to decrease over time due to growth of vegetation and the degradation and dispersion of these chemicals from natural processes in the environment.

Carbon Monoxide Poisoning in the Aftermath of Hurricanes Katrina and Rita – Louisiana, August - November 2005

Peter Vranken, RN DPH MBA

Introduction

Hurricanes Katrina and Rita made landfall on the United States Gulf Coast on August 29th 2005 and September 24th 2005 respectively, causing loss of life, massive property damage and widespread power outages. After hurricanes, residents often use portable generators and other gasoline-pow-

ered appliances for electrical power generation and cleanup activities. These devices produce carbon monoxide (CO) and their improper use can lead to CO poisoning. Previous investigations of post-hurricane CO poisoning determined that exposure to exhaust from portable generators was responsible for nearly all CO exposures. CO poisoning can be prevented by reducing exposure to CO through appropriate placement and ventilation of all gasoline-powered engines.

Methods

Immediately after Katrina made landfall, the National Center for Environmental Health (NCEH) at the Centers for Disease Control and Prevention (CDC) started collaborating with the affected states, including Louisiana, to rapidly implement real-time surveillance for post-hurricane CO poisoning. Cases were ascertained from four sources: (1) data from hyperbaric oxygen (HBO) chambers in hospitals statewide (2) data from acute care facilities in the most affected areas (3) data from the Toxic Exposure Surveillance System (TESS) compiled by the American Association of Poison Control Centers and (4) media news reports surveillance (MRS) from the hurricane-affected areas.

(1) Cases of unintentional CO poisoning that were reported by telephone from all Louisiana hospitals with HBO chambers. Less severe cases that were treated at emergency rooms but were not referred for hyperbaric treatment were not included. All reported cases received hyperbaric treatment in Louisiana; cases' state of residence, however, may differ.

(2) Cases of unintentional CO poisoning that were reported through an active morbidity surveillance system that was implemented in acute care facilities in and around New Orleans. These data represent cases from the hospital emergency rooms, federal Disaster Medical Assistance Teams and military field hospitals that were operational in Orleans, Jefferson, St. Bernard and Plaquemines parishes.

(3) Cases of unintentional CO poisoning that were reported by telephone to regional Poison Control Centers. TESS data may not include some of the fatal cases because most TESS reports result from public or health care provider inquiries about treatment of live patients. Cases with intentional exposure (suicide) and with fire or smoke exposure were excluded.

(4) Cases of unintentional CO poisoning ascertained by media news reports were identified by a daily search of Google News and LexisNexis. The search term used for both searches was "carbon monoxide" because it had been found to capture the most reports. Any media report from the hurricane-affected areas that cited unintentional CO poisoning was included. MRS tended to report more fatal cases because non-fatal cases were less likely to come to media attention.

Results

Table 1 includes the cumulative cases of unintentional CO poisoning reported by HBO surveillance (08/28/05 through 10/29/05), acute care facility surveillance (09/08/05 through 09/27/05), TESS (08/28/05 through 11/18/05) and MRS (08/28/05 through 11/18/05). The case counts from the four sources

cannot be summed because the case ascertainment methods from the four different sources were not comparable. Deduplication of cases was not conducted and cases were not confirmed.

Table 1: Cumulative number of non-fatal and fatal unintentional CO poisoning cases by reporting mechanism - Louisiana, 8/28/05-11/18/05

	HBO Chambers	Acute Care Facilities	Toxic Exposure Surveillance	Media Reports
Non-fatal	13	14	46	27
Fatal	0	0	0	14
Total	13	14	46	41

Cases were concentrated during the days immediately following Katrina and Rita respectively. However, occasional incidences of unintentional CO poisoning have been occurring throughout the period covered by this report, as a result of the drawn out recovery and delayed return of residents in the most affected areas. All cases reported through HBO chambers, for which information could be verified, were attributed to improper use and ventilation of gasoline-powered equipment and tools; improper placement of portable generators accounted for ninety-eight percent of the CO poisonings.

The extent of generator use in Louisiana post-hurricane Katrina is not known. However, an assessment of generator use in Florida after the 2004 hurricanes indicated that 17.5% of residents used portable generators. Of that group, five percent reported operating the generators indoors.

CO poisoning is easily preventable by reducing exposure to CO. Following safety messages (Table 2) were released, jointly by NCEH/CDC and the Louisiana Department of Health and Hospitals.

Table 2: Safety messages to prevent unintentional carbon monoxide (CO) poisoning

- Never use portable generators, pressure-washer engines, or other gasoline-powered tools inside the home.
- Place gasoline-powered equipment outside and away from windows or air intakes.
- Do not use gasoline-powered equipment in garages, carports, basements or other enclosed spaces.
- Opening windows, doors and operating fans, are not sufficient to prevent build-up of CO in the home.
- Get out of the house and seek medical help immediately if you or a family member has symptoms of CO poisoning. Symptoms include headache, fatigue, dizziness, nausea and vomiting and loss of consciousness.

For references or more information please contact pvranken@dhh.la.gov.

Vibrio Illnesses after Hurricanes Katrina and Rita - Louisiana August 29 - October 15, 2005

Susanne Straif-Bourgeois, PhD MPH; Annu Thomas, MPH;
Lori Kravet, BS; Danielle Haydel, BA MT

When Katrina, a category 4 hurricane, made landfall in Louisiana on August 29, 2005, it devastated most of the southeast parishes through wind and water damage. After the levees breached, major parts of the Greater New Orleans area were flooded. Hurricane Rita came on shore on the Louisiana/Texas

border on September 25 bringing further damage from Cameron to Lafourche parishes through flooding from the storm surge and wind.

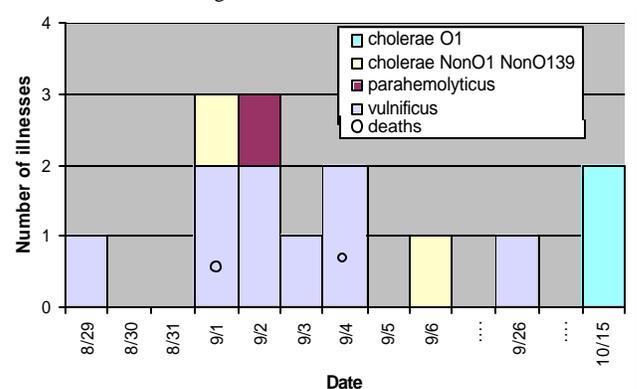
Vibrio are halophilic bacteria that are endemic in the Gulf of Mexico and brackish water bodies in Louisiana. Therefore with rising water levels came the legitimate concern of increased *Vibrio* infections in susceptible populations.

In hurricane-free years, Louisiana has on average about thirty *Vibrio* cases per year: *Vibrio vulnificus* (~25%), *Vibrio parahaemolyticus* (~25%), other *Vibrio* species (~50% - normally including 1 *Vibrio cholerae* O1 case per year). Wound infections account for about a third of all *Vibrio vulnificus* cases. *Vibrio* infections can be acquired through: the ingestion of raw or undercooked seafood; having a pre-existing wound during the time skin was exposed to contaminated water; sustaining a wound during the time skin was exposed to contaminated water.

A case of post-hurricane *Vibrio* infection is defined as clinical illness in a person who resided in Louisiana and where *Vibrio* species were isolated from a wound, blood, or stool and were culture-confirmed in the Louisiana State Laboratory. Louisiana residents who evacuated and were confirmed as a *Vibrio* illness by another state were not included in this summary but are included in a multiple state report published recently (MMWR September 14, 2005).

Between August 29 and October 15, sixteen cases of *Vibrio* illnesses in Louisiana residents were reported to the State Health Department (13 out of 16 tested in State Lab, the other 3 were tested at hospital labs) Eleven were identified as *Vibrio vulnificus* (with two fatalities), one as *Vibrio parahaemolyticus*, two as *Vibrio cholerae* Non O1 Non O139 and two as toxigenic *V. cholerae* O1 serotype Inaba biotype El Tor (Figure 1).

Figure 1: *Vibrio* illnesses after Katrina and Rita – Louisiana August 29 – October 15, 2005



Ten of the fourteen (71%) *Vibrio* cases with known onset date occurred the first week after Hurricane Katrina with eighty percent being wound-associated *V. vulnificus* infections. Fourteen out of the sixteen (88%) *Vibrio* illnesses had exposure to floodwater, one had a probable floodwater exposure and one person became infected after stepping on a nail while cleaning his/her yard. Ten cases had wound infections, four had gastroenteritis (including a one month old infant exposed to floodwater) and for two cases, the information on type of infection is missing.

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Vibrio Illnesses after Hurricanes Katrina and Rita (Cont.)

Vibrio infections were more likely to occur in men (14 males vs. 2 females) and Whites (8 Whites vs. 5 African-American and 3 unknown). The age of infected persons ranged from one month to eighty-nine years with a mean of fifty-seven years (mode 63 years, median 62.5 years). Eleven of the cases had a pre-existing condition, three had unknown pre-existing conditions and only two had no pre-existing conditions.

Most of the *Vibrio* cases lived in Orleans Parish before the hurricanes; three had a residency in Terrebonne Parish, two lived in St Bernard Parish, one in St. Tammany Parish and one in East Baton Rouge Parish.

Toxigenic *V. cholerae* O1, serotype Inaba, biotype El Tor was isolated from a wife and husband from Terrebonne Parish. While the husband had underlying conditions and serious complications during his illness, the wife only had mild diarrhea. Both of them recovered well. Although the couple waded in floodwaters, it is more likely that they became infected after eating boiled shrimp than being exposed to the floodwater because of the incubation period.

Especially for Katrina, persons with pre-existing conditions (and therefore more susceptible for wound infections) had to wade, sometimes for hours, through floodwater - an exposure which is not likely to occur in under normal conditions. Therefore, it is important to include the potential of wound-associated *Vibrio* infections in a hurricane disaster response plan in order to increase clinical awareness so that early and accurate diagnosis as well as appropriate treatment can be ensured in these patients. No *Vibrio*-related foodborne outbreaks were detected during the 2005 hurricane season.

Hurricane Response in Louisiana: The Animal Perspective

Gary Balsamo, DVM MPH&TM

Martha Littlefield-Chabaud, DVM MS; Terry Conger, DVM PhD

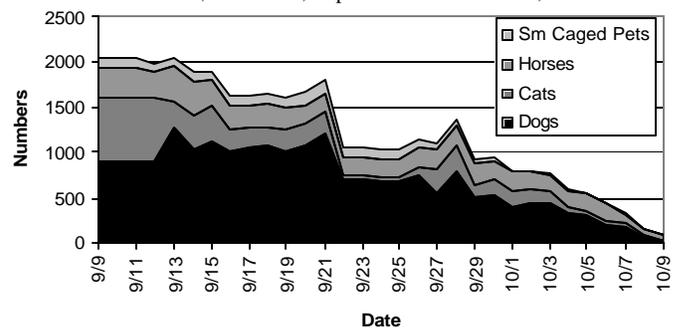
Note: Abbreviations defined at end of article

The recent hurricane disasters in Louisiana created a catastrophe not only for the people of south Louisiana but also for the state's animal population. The scope of animal abandonment and the necessity for animal rescue and maintenance precipitated several potential problems. The possibility of outbreaks of rabies and/or other zoonotic diseases, increases in animal bites to animal caretakers or to the population returning to affected areas and deleterious health effects of decomposing carcasses were some of the subjects addressed by agricultural, veterinary and public health agencies and organizations. To date, health and agricultural agencies have documented no contagious zoonotic or animal disease outbreaks, indicating that disease prevention efforts were successful in post-Katrina and Rita animal rescue, response and recovery.

The LVMA and the LDAF-OAHS have for several years planned, with the cooperation of several other organi-

zations and agencies, the sheltering and evacuation of animals in the event of a large scale emergency. Katrina and Rita's devastation affected nearly the entire southern portion of the state and tested these plans under the most extreme of circumstances. Animal agriculture sustained severe damage in some areas, as evidenced by the loss of nearly ninety percent of many livestock herds in areas of Cameron, Calcasieu, Vermilion, St. Bernard and Plaquemines Parishes. Approximately one third of the state's beef cattle was negatively impacted by the storms. Negative effects on animal agriculture included poultry facilities as far north as Sabine Parish where approximately 150,000 broiler chickens were lost. Flooding of New Orleans' historic Fairgrounds Racetrack and destruction of twenty of twenty-two horse barns at Delta Downs in Vinton are examples of damage sustained by the racehorse industry. At the Lamar-Dixon facility in Gonzales, Louisiana, the largest of the temporary animal shelters, officials estimate that 7000 to 8000 small companion animals and approximately 400 horses were processed and/or housed. (Figure 1)

Figure 1: Shelter animal populations - Lamar Dixon Facility
Gonzales, Louisiana, September 9 - October 9, 2005



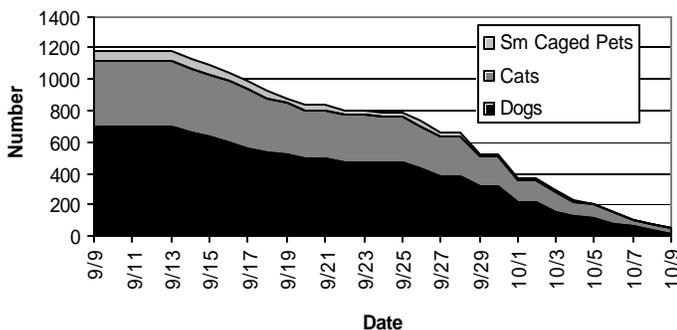
The pre-Katrina planning for animal rescue and sheltering was part of the State of Louisiana's Emergency Preparedness Plan. This plan identified a SART and RARTs in major metropolitan areas. Several of these RARTs had prepared facilities in areas distant from the greater New Orleans area to provide emergency shelters for pets of evacuees fleeing the approaching storm (Alexandria, Monroe, Shreveport). These teams also developed plans to rescue or provide emergency provisions for stranded animals that could not be evacuated.

When the magnitude of the effects of Katrina became apparent, the LARR ICP was established in the Louisiana Department of Agriculture building in Baton Rouge to oversee the operations. Management of satellite shelters was coordinated by the SART. The operation of these shelters, animal rescue efforts and the agricultural emergency response, exemplified the very best of private/public and government interagency cooperation. The USPHS, American VMA VMATs, 248th United States Airborne Army Medical Detachment (Veterinary Corps), several local veterinarians and hundreds of lay volunteers, provided veterinary assistance at several levels of the operation. The Baton Rouge Area VMA was assisted by the faculty and students of the LSUSVM in providing veterinary medical support at the Parker Coliseum in Baton Rouge and emergency care for all rescued animals.

Personnel from the USDA-APHIS Veterinary Services and the OAHS-LDAF, orchestrated livestock, equine and laboratory animal evacuation and rescue from the Katrina-flooded areas in the New Orleans area and the Rita-marooned areas in Vermilion, Calcasieu and Cameron Parishes. The Louisiana National Guard and the U.S. Coast Guard assisted in the rescue effort, providing aircraft and other assets for use in the response.

The two largest post-Katrina shelters were located in the greater Baton Rouge area. The Lamar Dixon Expo Center at Gonzales, managed by HSUS at the pre-arranged invitation of the Louisiana SPCA and the LDAF State Veterinarian. This shelter dispatched humane organization affiliated and credentialed teams daily to the New Orleans area for animal rescue and recovery. Besides rescuing abandoned animals, these teams responded to specific requests for the feeding and watering of stranded animals. The Parker Agricultural Coliseum on the campus of LSU served as a shelter for pets with known owners who theoretically would be available to assist in the care of these animals. Parker Coliseum and the LSUSVM served respectively as shelter and healthcare facility for animals in critical need of veterinary care. LSUSVM also provided emergent care for animals at Lamar-Dixon. The other five satellite shelters housed approximately 1600 additional pets during the same period. (Figure 2)

Figure 2: Shelter animal populations, Parker Agricultural Coliseum (LSU) Baton Rouge, Louisiana September 9 - October 9, 2005



USDA-APHIS and LDAF reported that over 8,000 individual requests for pet rescues were received from Katrina and Rita evacuees. The Cajun Clickers Computer Club of Baton Rouge, compiled, catalogued and coordinated rescue efforts. Livestock and horses, many that had sought refuge on levees to escape rising floodwaters, were often rescued by barge. Public service announcements were disseminated through local media to notify the public of these rescues and advise owners of reclamation opportunities.

Hay and feed distribution centers were established in several parishes in order to facilitate care of livestock. The LSU Agricultural Center, LSUSVM and the Louisiana Cattleman's Association, working in collaboration with the U.S. Coast Guard and National Guard helicopter crews, provided airlifts of hay to stranded animals in Plaquemines, St. Bernard, Calcasieu, Cameron and Vermilion Parishes. Hay was donated by individuals and companies nationwide.

Several problems were identified: 1) lack of coordination of animal rescue efforts 2) lack of security and supervision

of volunteers at the larger shelters 3) several "rogue" animal rescue organizations from locations around the nation acted independently without guidance or coordination with LVMA, state agriculture officials or local animal control agencies. Such problems will need to be avoided in future disasters.

The handling of animals with behavioral problems, especially overtly aggressive or anxious animals, posed significant challenges. The most prominent breed (>50%) of rescued dogs from hurricane stricken areas of Orleans Parish was the Pit Bull Terrier or Pit Bull Cross. Difficulty in identifying foster care outlets for this breed was a concern due to the breed's association with severe and sometimes fatal bites. Their presence at the shelter facilities also constituted a risk to caretakers. Efforts were made by HSUS and USPHS associates and the U.S. Army Veterinary Corps to provide behavioral evaluations of each suspect animal. Hundreds of animals were saved from euthanasia due to accurate classification of untoward behavior as normal responses to stress that would correct with proper care and reduction of anxiety. Truly aggressive dogs were euthanized under very strict guidelines. (Table 1)

Table 1: Euthanasia * policy employed at the Lamar-Dixon and Parker Coliseum shelters

ANIMALS NOT ELIGIBLE FOR FOSTER CARE OR ADOPTION	
Approval of two veterinarians required	Moribund animals for which veterinary care would not relieve their suffering
Approval of two veterinarians required	Aggressive animals that posed a risk to humans safety or the safety of other animals

* Euthanasias were performed on the above animals in a secluded site to preserve the dignity of the animals and to minimize stress to caretakers

Hundreds, if not thousands, of frightened, stressed or excessively aggressive dogs and cats were fed, cleaned and exercised by hundreds of caretaker volunteers, many with little or no animal handling experience, resulting in the frequent occurrence of animal bites and scratches. These potential exposures combined with the unknown rabies vaccination status of the animals in the shelters necessitated the formulation of a protocol to evaluate each exposure for proper determination of need of post exposure rabies prophylaxis. This system was created through cooperation of the State Public Health Veterinarian-OPH, the State Veterinarian-LDAF and USPHS with the assistance of the VMATs, LSUSVM and LVMDL. The general protocol is illustrated in Table 2.

Table 2: Rabies Testing Protocol

Characterization of Exposure	Response
<ul style="list-style-type: none"> Exposure (bite or other exposure as determined by medical authorities) Bite to extremities (hands, arms, feet, legs) or to trunk below shoulders. 	10 day observation in isolated area of shelter with increased security...If animal healthy at termination of observation, no PEP necessary Death or signs of illness during observation period...brain submitted for rabies examination
<ul style="list-style-type: none"> Exposure (bite or other exposure as determined by medical authorities) Bite on upper torso (shoulders or above), neck, or head 	Animal euthanized and brain submitted for rabies examination
<ul style="list-style-type: none"> Exposure (bite or other exposure as determined by medical authorities) Animals determined to be overtly aggressive by animal behaviorists or showing neurological signs at the time of the exposure 	Animal euthanized and brain submitted for rabies examination

(Continued on next page)

Hurricane Response in Louisiana (Continued from page 7)

Problems experienced with largely untrained volunteers in an environment that featured thousands of animals with no documentation of vaccination status will be the subject of future study. An *EpiAid* group - a team of epidemiologists from the CDC - was requested by the State Public Health Veterinarian to analyze the situation and make recommendations to enhance the safety of the participants. Their preliminary data indicates that 145 animal bites were documented (62% by dogs, 37% by cats, 1% by other species). Eighty-eight percent of the victims were largely volunteers not associated with any established animal care or rescue group. These results seem to indicate the importance of experience or training in animal handling in minimizing the incidence of bite exposures in caretakers. Evidence exists that several bites went unreported.

The inability of tens of thousands of evacuees to return to the region resulted in scores of pets having no chance of reclamation by their owners. To a lesser extent problems existed with reunification of livestock with responsible parties. All rescued pets were vaccinated for rabies and other important contagious diseases, treated for parasites, implanted with a microchip for identification and photographed for web posting. Reclamation protocols were developed for both companion animals and livestock. Notices to owners to reclaim pets were posted on the FEMA website (<http://www.fema.gov/press/2005/katrinabasic.shtm#pets>). The pet identities and photographs were listed on the www.petfinder.com website for reference by the public. (Table 3)

Table 3: Overview of the official procedure for animal reclamation

RECLAMATION AND ADOPTION PROTOCOLS	
Landfall dates: Hurricane Katrina, August 29, 2005	Hurricane Rita, September 22/23, 2005
Pets	Farm Animals
Not retrieved by owner by October 1: PROVISIONAL ADOPTION: May be adopted by new owners, but still may be claimed by original owner until December 31, 2005. After December 31, 2005 the adoptions would become permanent.	Animals were held for identification until October 27, 2005. After October 27 the animals would be offered for sale, the proceeds being used to defray the cost of the relief effort. The Louisiana Brand Commission would settle any disputes regarding farm animal ownership.

This event may have been the largest evacuation of domestic pets ever attempted in the United States. Approximately sixty-five percent of U.S. households maintain pets and up to twenty-five percent of pet owners refuse to evacuate areas in peril without their pets. One pre-Katrina study estimated that five to fifteen percent of the total population instructed to evacuate would be unwilling to do so because of concerns about pets. The immediate evacuation of a metropolitan area of over one million people combined with the limited availability of shelters accepting pets precipitated two phenomena: 1) the refusal of persons, some existing in life threatening conditions post-storm, to leave affected areas. 2) the abandonment of thousands of animals in affected areas. Wayne Pacell, president of the National Humane Society, estimates that over 50,000 animals were left behind in New Orleans alone.

Acknowledgments:

In addition to the groups already cited, the following agencies are recognized.

- HSUS
- American Humane Association
- Louisiana SPCA
- FEMA • UAN-EARS
- LSU AgCenter
- Noah's Wish
- American SPCA
- *Cajun Clickers* data entry group
- Church of Scientology Disaster Volunteers
- V-MATs from across the Nation
- USPHS personnel from across the Nation
- USDA, APHIS, VS volunteers from Arkansas, Colorado, Oklahoma, South Dakota, Michigan, Louisiana, California and New Jersey
- Innumerable lay volunteers and veterinarians from across the Nation

*Abbreviations:

Animal and Plant Health Inspection Service (APHIS)
Centers for Disease Control and Prevention (CDC)
Emergency Animal Rescue Services (EARS)
Federal Emergency Management Administration (FEMA)
Humane Society of the United States (HSUS)
Incident Command Post (ICP)
Louisiana Department of Agriculture and Forestry (LDAF)
Louisiana Animal Rescue and Response (LARR)
Louisiana State University (LSU)
Louisiana Veterinary Medical Association (LVMA)
National Humane Society (NHS)
Office of Animal Health Services (OAHS)
Post Exposure Prophylaxis (PEP)
Regional Animal Response Team (RART)
School of Veterinary Medicine (SVM)
Society for the Prevention of Cruelty to Animals (SPCA)
State Animal Response Team (SART)
United Animal Nations (UAN)
United States Department of Agriculture's (USDA)
United States Public Health Service (USPHS)
Veterinary Medical Association - VMA
Veterinary Medical Assistance Teams (VMATs)
Veterinary Services (VS)



Post Katrina Case Study

Kathleen Golden, MSPH

Approximately two weeks post hurricane Katrina, six firemen who were helping with recovery efforts in the New Orleans area were exposed to carbon monoxide. They had been sleeping in a camper overnight which was next to an RV camper whose generator was pumping exhaust underneath the firemen's camper. The firemen experienced the following symptoms: headaches, dizziness, light-headedness disorientation, nausea, vomiting and lethargy.

These firemen, who are members of a coast guard contingency, were admitted to East Jefferson General Hospital in Metairie, Louisiana on September 13, 2005. The blood gas tests that were performed, showed that the carboxyhemoglobin levels of the patients were elevated. The six firemen were administered carbon monoxide poisoning treatment which consisted of one hundred percent oxygen and they were observed for twenty-four hours.

Katrina Related Responses From Regions 3, 5, 8 and 9* - Louisiana

Region 3

Penny Cuneo, RN BSN

The Special Needs Shelter (SNS) housed 381 individuals at one time or another on Nicholls State University campus for Hurricane Katrina. The SNS remained open for twenty-seven days with the average length of stay being four to five days per shelteree. Due to the quick and mass exodus of New Orleans, most evacuees (90%) arrived needing some type of durable medical equipment (DME) and very few (10%) arrived with their required medications. Roughly a third (35%) of the evacuees had caregivers with them. The immense needs of these evacuees were quite evident. Local, regional, state and nationwide, individuals appeared, willing to assist in this time of catastrophe, to meet these needs.

Many great things were accomplished during this "real life drill", yet room for improvement remains. Current forms utilized need to be reassessed, updated and charts standardized. Maintenance of existing, as well as future, relationships with DME, pharmaceutical and other outside resources should be entertained. This will aid in planning for continual, longer-term support in providing for equipment, medications and essentials for daily living. Final destination/locations of shelterees need to be obtained upon the shelteree's discharge from the shelter.

The response to South Louisiana's cry for help was overwhelming from local, statewide and national communities. People truly united to make a horrific situation bearable.

Region 5

Debra Klinghoffer, PhD MPH

The Region 5 Special Needs Shelter (SNS) housed a total of 220 Katrina evacuees on the campus of McNeese State University in Lake Charles. This number includes both patients (n=167) and their respective caregivers (n=53). The intent was to have one caregiver per patient, however with a patient-to-caregiver ratio of 3.2, obviously this was not the reality of the shelter situation. The SNS received its first Katrina patients on Sunday, August 28, 2005 and was opened for a total of 25 days. It sheltered patients until Hurricane Rita, which struck the SW Louisiana coastline in the early morning hours of September 24, 2005, forced Region 5 to evacuate. Thanks to the foresight of the local Office of Emergency Preparedness and Homeland Security (OEPHS) and the City/Parish government, local residents with medical needs, along with our Katrina evacuees from the SNS, were able to evacuate to safety with our counterparts in Shreveport/Bossier City (Region 7). Parish school buses were used to pick up local residents along the major streets in the area. These Region 5 citizens were then taken to the Lake Charles Civic Center for transport via motor coach to Shreveport. Post Hurricane Rita, the Southwestern Region was unable to neither support nor sustain a SNS due to lack of essential services for many weeks to months in some areas. Most of our fundamental infrastructure was destroyed.

Due to Region 5's unique situation of providing support for Hurricane Katrina and requiring recovery for Hurricane Rita, several non-SNS issues need to be highlighted. During the span of August 28 until November 21, 2005, Region 5 sanitarians working to provide safe environmental services were extremely busy. They completed 1,486 physical surveys of establishments comprising both retail food as well as the food and drug program. These surveys required more than 1,780 hours to complete initial assessments and did not take into account follow-up visits. Sanitarians provided site visits and evaluations of health and safety issues at all shelters on a daily basis as well as assisting businesses in their attempts to re-open. Engineering Services, along with one-on-one consultations together with individual water system managers and operators provided technical support to more than 120 water systems in Region 5. These systems required evaluation and testing for the safety of potable water due to loss of pressure and destruction of service lines related to the storm.

Region 8

Donald Michael III, MPH

The Special Needs Shelter, a "shelter of last resort" for evacuees with special medical needs, is operated in the Fant Ewing Coliseum on the campus of the University of Louisiana Monroe by the Department of Social Services (DSS) and the Office of Public Health (OPH). During its operation between August 27 - September 11 (Katrina) and September 22

(Continued on next page)

- October 8 (Rita), DSS and OPH staff evaluated 450 persons for admission and provided twenty-four hour medical care, counseling and social work services, food and shelter to a total of 185 individuals and approximately forty caregivers. The average length of stay in shelter was 6.8 days, ranging from only hours to sixteen days.

Shelter patients were primarily (89%) residents of Jefferson, Orleans, and Calcasieu parishes in Louisiana and Orange County, Texas. Males accounted for 51.4% of the shelter population with the average age of patients being 54.2, ranging from one year to ninety-five years. The most common daily care requirements were special diet (17.8%) and intermittent breathing treatments (6.5%). Upon admission, patients were assigned to specific areas of the shelter to ensure consistency and specialization of care. The most common assignments made were mental deficit (43.5%), mobility deficit (16.3%), respiratory (13.0%) and minimum care (10.9%). At discharge, 41.7% were transferred to another shelter or hospital facility; the remaining individuals left on their own or with family.

Region 9

Julie Hand, MSPH

In Region 9, the Office of Public Health (OPH) Emergency Operations Center (EOC) was activated on August 27th. The Region's Special Needs Shelter (SNS) opened at 8 pm on August 27th, closing at 2 pm on August 30th with fifteen patients and nine caregivers. Based on weather forecasts, Region 9 was located in the direct path of Hurricane Katrina; if patients could travel further to other shelters they were encouraged to do so. The SNS site is the Kinesiology building on the campus of Southeastern Louisiana University in Hammond. The EOC relocated on Sunday, August 28th to the Hammond Health Unit to move staff farther away from the path of this storm.

Early on August 29th, both the EOC and the SNS lost power and all communications. As there was no generator for the SNS, the goal was to get patients moved as quickly as possible after the storm whether to their homes or other facilities. This was done through hard work on the part of many employees of OPH Region 9 and the Tangipahoa Sheriff's Office. Numerous staff made the Hammond Health Unit their home for more than a week because it was extremely difficult to travel to their homes (if not impossible) and there was no communication infrastructure. By late evening on August 30th the EOC had one functioning phone line; power was not restored until September 1st.

All five parishes of Region 9 were heavily damaged by Hurricane Katrina. The eye passed directly over Slidell in St. Tammany Parish damaging bridges and communications - virtually throwing the Region back into the dark ages. Due to the dedication and hard work of many employees, amazing things were accomplished. A person was sent as a liaison to work in the state EOC in Baton Rouge, obtaining and assuring the

delivery of desperately needed supplies to the Region. All support was thrown behind the St. Tammany Parish SNS at Covington High School providing them with staff, medicines and anything else that was requested. OPH continued to communicate with our hospitals by sending a nurse out daily (sometimes more than once a day) to ensure they had everything needed. An OPH representative was also constantly present at each Parish EOC, which was planned prior to the storm and was an integral part to many accomplishments.

The recovery from this storm in Region 9 could not have been achieved without the participation of every OPH employee. With numerous obstacles in the way, all jobs still managed to be done well. There were many reasons why employees could have easily given up: they were displaced, away from their families, the conditions of their homes were unknown and there was virtually no communication with the world outside of Region 9. However, because of the hard work of the employees and their refusal to give-up, the response to Hurricane Katrina in Region 9 is something that Louisiana can be proud of.

* Map on pg 11

OPH Training Offerings

IN-HOUSE TRAINING

FET I & II

The Infectious Disease Epidemiology Section will repeat the Field Epidemiological Techniques I and II classes on March 28-29, 2006. This training will be targeted towards sanitarians, public health nurses, infection control professionals, disease surveillance specialists, epidemiologists, health care providers and other public health care professionals interested in epidemiological principles and outbreak investigations. There will be a separate registration form for each day. The workshop will take place in the Orleans Room at the Pan American Life Building, 601 Poydras Street in New Orleans.

For more information call or e-mail Louise Bellazer at 504-219-4546 or lbellaz@dhh.la.gov or Rosemarie Robertson at 504-219-4548 or rroberts@dhh.la.gov.

LOUISIANA COMMUNICABLE DISEASE SURVEILLANCE

September-October, 2005

Table 1. Disease Incidence by Region and Time Period

DISEASE	HEALTH REGION									TIME PERIOD					
	1	2	3	4	5	6	7	8	9	Sep-Oct 2005	Sep-Oct 2004	Jan-Oct Cum 2005	Jan-Oct Cum 2004	% Chg	
Vaccine-preventable															
Hepatitis B	Cases	0	1	0	0	0	1	1	0	0	3	16	61	59	+3.4
	Rate ¹	0.0	0.2	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.1	0.4	1.4	1.4	NA
Measles	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	Cases	0	0	0	0	0	0	0	0	0	0	1	7	7	0.0
Rubella	Cases	0	0	0	0	0	0	0	0	0	0	0	1	0	NA *
Pertussis	Cases	0	1	0	0	0	0	0	0	0	1	1	34	14	142.9
Sexually-transmitted															
HIV/AIDS	Cases ²	10	10	0	7	0	2	0	6	2	37	186	692	949	-0.3
	Rate ¹	1.0	1.2	0.0	1.3	0.0	0.7	0.0	1.7	0.5	0.8	4.3	15.8	21.7	NA
Gonorrhea	Cases	48	150	39	49	13	8	106	70	26	509	1564	7622	8855	-13.9
	Rate ¹	4.6	24.8	10.2	8.9	4.6	2.7	20.3	19.8	5.9	11.4	35.0	170.6	198.1	NA
Syphilis (P&S)	Cases	3	8	0	0	0	0	0	0	0	11	76	203	268	-24.5
	Rate ¹	0.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.7	4.5	6.0	NA
Enteric															
Campylobacter	Cases	0	1	0	1	0	0	0	0	3	5	19	93	125	-25.6
Hepatitis A	Cases	1	0	1	0	0	0	0	0	1	3	11	59	44	34.1
	Rate ¹	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	1.4	1.0	NA
Salmonella	Cases	3	6	15	4	4	6	7	5	11	61	229	644	809	-20.4
	Rate ¹	0.3	1.0	3.9	0.7	1.4	2.0	1.3	1.4	2.5	1.4	5.3	14.9	18.7	NA
Shigella	Cases	0	1	1	1	1	0	0	0	3	7	42	113	260	-56.5
	Rate ¹	0.0	0.2	0.3	0.2	0.4	0.0	0.0	0.0	0.7	0.2	1.0	2.6	6.0	NA
Vibrio cholera	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vibrio, other	Cases	2	1	0	2	0	0	0	0	0	5	8	25	38	-34.2
Other															
<i>H. influenzae (other)</i>	Cases	0	0	0	0	0	0	0	0	0	0	3	30	13	130.8
<i>N. Meningitidis</i>	Cases	0	0	0	0	0	0	0	0	0	0	4	29	35	-17.1

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.

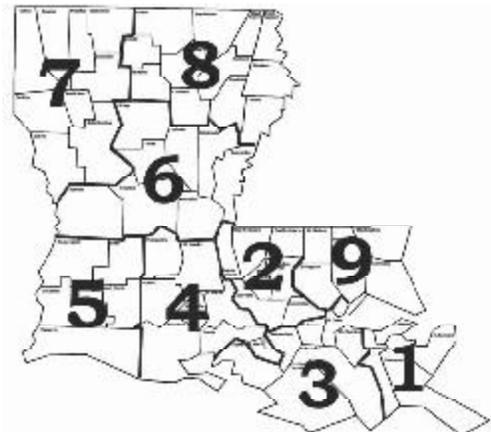
* Percentages not calculated for numbers less than 10

Table 2. Diseases of Low Frequency (January-October, 2005)

Disease	Total to Date
Legionellosis	1
Lyme Disease	4
Malaria	2
Rabies, animal	14
Varicella	111

Table 3. Animal rabies (September-October, 2005)

Parish	No. Cases	Species
	0	



**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.]

Anthrax	Neisseria meningitidis (invasive disease)	Smallpox
Botulism	Plague	Staphylococcus Aureus,
Brucellosis	Poliomyelitis, paralytic	Vancomycin Resistant
Cholera	Q Fever	Tularemia
Diphtheria	Rabies (animal & man)	Viral Hemorrhagic Fever
Haemophilus influenzae (invasive disease)	Rubella (German measles)	Yellow Fever
Measles (rubeola)	Rubella (congenital syndrome)	

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.

<u>Aseptic meningitis</u>	<u>Hepatitis B (carriage)</u>	<u>Salmonellosis</u>
<u>Chancroid¹</u>	<u>Hepatitis B (perinatal infection)</u>	<u>Shigellosis</u>
<u>E. Coli 0157:H7</u>	<u>Hepatitis E</u>	<u>Syphilis¹</u>
<u>E. Coli Enterohemorrhagic (other)</u>	<u>Herpes (neonatal)</u>	<u>Tetanus</u>
<u>Encephalitis, Arthropod borne</u>	<u>Legionellosis (acute disease)</u>	<u>Tuberculosis²</u>
<u>Hantavirus Pulmonary Syndrome</u>	<u>Malaria</u>	<u>Typhoid Fever</u>
<u>Hemolytic-Uremic Syndrome</u>	<u>Mumps</u>	
<u>Hepatitis A (acute disease)</u>	<u>Pertussis</u>	

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 (AIDS)	Hepatitis C (acute and infection)	Streptococcal Toxic Shock Syndrome
Blastomycosis	Human Immunodeficiency Virus (HIV infection)	Streptococcus Pneumoniae (invasive infection, penicillin resistant (DRSP))
Campylobacteriosis	Listeria	Streptococcus Pneumoniae (invasive infection in children < 5 years of age)
Chlamydial infection ¹	Lyme Disease	Trichinosis
Coccidioidomycosis	Lymphogranuloma Venereum ¹	Varicella (chickenpox)
Cryptosporidiosis	Psittacosis	Vibrio Infections (other than cholera)
Cyclosporiasis	Rocky Mountain Spotted Fever (RMSF)	West Nile Fever
Dengue	Staphylococcus Aureus, Methicillin/Oxacillin Resistant (MRSA) (invasive disease)	West Nile Infection (past or present)
Ehrlichiosis Hansen's Disease (leprosy)	Staphylococcal Toxic Shock Syndrome	
Enterococcus, Vancomycin Resistant (VRE) (invasive disease)	Streptococcal disease, Group A disease)	
Giardia	Streptococcal disease, Group B (invasive disease)	
Gonorrhea ¹		
Hansen's Disease (leprosy)		
Hepatitis B (acute)		

Other Reportable Conditions

Cancer	Phenylketonuria*	Spinal Cord Injury**
Complications of Abortion	Reye's Syndrome	Sudden Infant Death Syndrome (SIDS)
Congenital Hypothyroidism*	Severe Traumatic Head Injury**	
Galactosemia*	Severe Undernutrition (severe anemia, failure to thrive)	
Hemophilia*	Sickle Cell Disease (newborns)*	
Lead Poisoning		

Case reports not requiring special reporting instructions (see below) can be reported by Confidential Disease Case Report forms (EPI-2430), phone: 504-219-4546, fax: 504-219-4522, or web base at <https://ophrdd.dhh.state.la.us>.

¹Report on STD-43 form. Report cases of syphilis with active lesions by telephone.

²Report on CDC72.5 (f.5.2431) card.

*Report to the Louisiana Genetic Diseases Program Office by FAX: 504-219-45880

**Report on DDP-3 form; preliminary phone report from ER encouraged (504) 568-2509. Information contained in reports required under this section shall remain confidential in accordance with the law.

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**DEPARTMENT OF HEALTH AND HOSPITALS
OFFICE OF PUBLIC HEALTH
P.O. BOX 60630 NEW ORLEANS LA 70160**

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