

Louisiana



Reported Morbidity
March/April, 1979

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DEPARTMENT OF HEALTH AND HUMAN RESOURCES
OFFICE OF HEALTH SERVICES AND ENVIRONMENTAL QUALITY
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MONTHLY MORBIDITY REPORT

Provisional Statistics

from
EPIDEMIOLOGY UNIT AND PUBLIC HEALTH STATISTICS

LEGIONNAIRES DISEASE - UPDATE, 1979

It is now about two years since the Legionnaires' Disease bacterium (LDB) was first identified. Legionnaires' Disease has engendered a tremendous amount of interest in medical circles as well as with the general public. An international symposium on Legionnaires' Disease was convened at the Center for Disease Control in Atlanta in November 1978 to review some of the recent findings about the LDB and the disease it causes. A brief summary of the findings presented at that symposium and some of the recent clinical literature is reviewed below.

EPIDEMIOLOGY:

There have been 10 serologically confirmed cases of Legionnaires' Disease in Louisiana since October 1977. In this group there are four females and six males. The age range is 30 to 77 with the average age 49. There are eight whites and two blacks. There have been two deaths among the ten patients; but in each of the deaths, the patients had severe underlying illnesses. Nine of the Louisiana cases were sporadic and one was part of an outbreak at a VFW

BULLETINS

RABIES IN HORSE IN RAPIDES PARISH

Rabies was recently identified by fluorescent antibody technique from the brain of a horse in Rapides Parish. The horse died after a two day illness in which it had exhibited violent behavior. The source of the horse's exposure is not known but rabies does exist in skunks in the area. The horse could have been bitten by an infected skunk while grazing in its large wooded pasture. The finding of rabies in a large animal in Rapides was probably a random event and does not indicate an upsurge of rabies in the area.

The veterinarian attending the horse was not bitten but did have significant exposure to the horse's sputum during its illness and while obtaining the brain specimen for rabies testing. The veterinarian is now undergoing rabies post-exposure prophylaxis.

Although human rabies is an exceedingly rare disease in the United States, animal rabies continues to occur and in Louisiana it is primarily confined to the rural central and northern parishes. The disease is especially prominent in skunks, foxes, raccoons, and bats. In the first 4 months of this year 4 skunks and 1 bat have been positive for rabies. Large animals are usually not involved. Only 1 other horse and 1 cow have been positive in the last 10 years in Louisiana.

This incident illustrates the need to suspect rabies in domestic animals other than cats and dogs and to exercise extreme caution in handling sick animals with typical rabies symptoms.

RED MEASLES

Measles activity is slowing down somewhat but small outbreaks and isolated cases are still being reported from around the state. The large outbreaks in Ouachita and Rapides Parishes have almost come to a halt with only a few scattered cases now being reported. Starting in late March, a new outbreak began in Washington Parish with approximately 35 suspect cases reported to date and 4 serologic confirmations. Three suspect cases have also been reported recently from neighboring St. Tammany Parish.

After a lull of several years, red measles has emerged as a major problem in Louisiana this past year. Physicians are urged to have a high index of suspicion for this disease and to report all suspect cases to their parish health units.

convention in Dallas in August 1978. The breakdown of cases by parish is as follows: Caddo - 3; Orleans - 3; DeSoto - 1; Jefferson - 1; St. Tammany - 1; Webster - 1.

Nationwide, as of November 1978, 453 sporadic cases have been diagnosed in 43 states. The majority have occurred in eastern and midwestern states. The age range has been 2 to 84 with the median age in the mid-50's.

Besides the sporadic cases, there have been approximately ten outbreaks in the last two years involving over 500 cases.¹ These outbreaks have occurred predominately in the summer; sporadic cases have occurred throughout the year but with a peak in the late summer and early fall.

It appears that Legionnaires' Disease is truly an international disease. Cases have now been reported from Australia, Canada, England, Scotland, Israel, Holland, Denmark and Sweden.²

CHARACTERISTICS OF ORGANISM:

Legionnaires' Disease is caused by fastidious gram negative bacteria. Despite an intensive effort to discover the cause of the Philadelphia outbreak in the summer of 1976, it took over five months to make a firm identification of the LDB. It does not stain with the usual histologic stains and does not grow on the usual culture media. For optimal growth it needs a narrow pH range, 35° C incubation, and a 5% CO₂ atmosphere and even then it grows very slowly. The first identification of the organism was from a lung autopsy specimen which had been passed through guinea pigs and incubated in hens' eggs. LDB was identified only after looking at smears made of the yolk sacs of the hens' eggs.

It now appears that Legionnaires' Disease is not a new disease. Specimens are often saved from outbreaks where no etiologic agent can be implicated. When these specimens have been reexamined, LDB has been identified. A case going back as far as the 1940's has been positively identified as being caused by LDB. The earliest confirmed outbreak was in 1965.

CLINICAL FEATURES:

LDB causes a disease spectrum ranging from a possible asymptomatic state to severe fulminating pneumonia resulting in death. In several communities where outbreaks have taken place (e.g. Burlington, Vermont; Kingsport, Tennessee; and Bloomington, Indiana), as many as 25% of selected asymptomatic residents in the outbreak areas have had elevated antibody titers to LDB. Whether these individuals truly are an asymptomatic recently infected population or whether they have been infected in the distant past and had only mild symptoms at the time of infection cannot be accurately determined at this time.

A mild variant of Legionnaires' Disease has been termed "Pontiac Fever." An outbreak now linked to LDB occurred in Pontiac, Michigan in 1968. In this outbreak only flu-like illness characterized by fever, muscle aches, and headache occurred. There were no deaths or even pneumonias associated with this outbreak.

The severe form of Legionnaires' Disease occurred in Philadelphia in July, 1976. In this now classical outbreak at the American Legion conventions, there were 221 cases and 34 deaths.

The "classic" Legionnaires' case begins with systemic symptoms including malaise, weakness, loss of appetite, myalgias, and headache followed by high fever and shaking chills. A dry cough is usually the first respiratory symptom although thin blood-streaked sputum is occasionally present. Pleuritic chest pain is a common symptom. Confusion, disorientation, and even frank amnesia have been observed and these symptoms can often not be explained by high fever or hypoxia. GI symptoms especially diarrhea appear to be prominent early in the disease in some patients.

The typical Legionnaires' patient presents as "looking very sick" but with few abnormal findings on a careful physical examination. As many as 60% of patients in one series had bradycardia but this plus a few rales are often the only abnormalities noted on examination.³

Legionnaires' Disease patients often give a history of cigarette smoking (about 90% in Tennessee outbreak) and often they have a preexisting underlying disease such as cancer, alcoholism, or emphysema (about 50% in Tennessee outbreak).

The abnormalities on the usual laboratory examinations are often nonspecific. Leukocytosis, hyponatremia, hypophosphatemia, and abnormal liver function tests often occur. The pneumonia usually involves the lower lobes and in most cases two or more lobes are affected. Pleural effusions, often bilateral, and microscopic hematuria and proteinuria are also common findings.

Major complications of Legionnaires' Disease are renal and respiratory failure. Acute renal failure without previously documented hypotension has been seen and several cases have required temporary dialysis. Patients usually die of progressive respiratory failure secondary to fulminant pneumonia. The case fatality rate is about 15% - 20% overall and greater than 50% if there is a severe underlying disease.

In vitro, LDB is sensitive to most antibiotics; but all clinical studies up to the present show that erythromycin (2 grams/day for 3 weeks) is the drug of choice. In those treated with erythromycin, improvement often occurs within 24 hours and the death rate is reduced by as much as 50% below that occurring in patients treated with other drugs. Supportive therapy including oxygen, respirators, and dialysis have also been lifesaving.

DIAGNOSIS:

Unfortunately, there is not yet a quick and easy way to diagnose Legionnaires' Disease. Routine sputum Gram stains often show only a few polymorphonuclear leukocytes and no bacteria. LDB has only rarely been cultured from pleural fluid and direct culture of pleural fluid or lung tissue may take 10 or more days to grow. Direct immunofluorescent or silver impregnation staining can be accomplished in 1 day but these techniques usually involve obtaining living lung tissue. Lung biopsies are invasive diagnostic tests which are certainly not without risk in very sick patients. Direct fluorescent antibody studies can be done directly on sputum or transtracheal aspirates. Early reports showed a low return using this method but a recently published study has pointed out that five of seven confirmed serologic cases (71.4%) in one series had positive sputa for LDB by direct fluorescent antibody staining.³

Most cases of Legionnaires' Disease are diagnosed by serologic testing. Acute and convalescent sera are drawn 3-8 weeks apart and a 4-fold rise in titer is taken as retrospective evidence of disease. Two blood samples are necessary since, as has been pointed out, there are many individuals who have elevated serum titers to Legionnaires' Disease. In an outbreak situation one elevated titer ($\geq 1:256$) in a patient with pneumonia is presumptive but not definite evidence for recent infection. Initially, only the Center for Disease Control had the capability of testing for Legionnaires' Disease. Now many state labs, including our own, can provide serologic testing. However, until a simple reliable rapid diagnostic test becomes readily available, physicians must make an educated guess and treat with erythromycin anyone they suspect of having the disease.

Although there is nothing specific about the history, physical examination, or laboratory tests, from all the information obtainable there is a composite picture which emerges in the Legionnaires' case. The patient is often male over 50 years of age with a history of smoking or an underlying chronic disease who presents with a history of dry cough, high fever, chills, and diarrhea, rapidly progressing to confusion and multilobular pneumonia. On sputum Gram stain and routine culture, no bacteria can be identified and the patient's chest radiograph worsens despite supportive therapy and cephalosporin or aminoglycoside antibiotics. This type of patient should have serologies drawn and be started on erythromycin immediately.

SOURCE AND TRANSMISSION OF LDB:

There are two bits of epidemiologic data to suggest an environmental source for LDB: (1) There has never been a confirmed case of person-to-person spread. Outbreaks are often associated with buildings and places rather than persons. (2) There is good evidence of persistence of Legionnaires' Disease at a particular locale over several months and even years. In Philadelphia, there have been two clusters of Legionnaires' cases at the Bellevue Strafford Hotel (1974 and 1976). In Benidorm, Spain, one hotel was associated with an outbreak in tourists in 1973 and isolated cases in 1977 and 1978. At the Wedsworth Medical Center in Los Angeles, about 60 cases

have occurred since July 1977. The cases began occurring shortly after the hospital opened.

Along with an association with buildings, there have been several positive environmental samples associated with outbreaks. Cooling towers, evaporative condensers, moist dirt, and streams have all been found positive and laboratory experiments have shown that LDB can live in tap water for over one year. Epidemiologic data implicating specific environmental sources and the finding of positive environmental samples associated with outbreaks appear to be convincing evidence for a cause and effect relationship, but positive water-tower samples have also been found in cities where no outbreaks have been identified.

The logical follow-up question would be: Should we routinely check all water towers for LDB? It has already been stated that positive environmental samples do not always correlate with clinical infections in the immediate area. Also, the testing is very complex and expensive. The laboratories at the Center for Disease Control (CDC) currently test the vast majority of environmental samples in the United States. It is a very laborious task, and four people working full time at the CDC can process only 16 specimens in a two week time interval. For these reasons, the current recommendation is that environmental sampling is indicated only in the epidemiologic investigation of outbreaks of Legionnaires' Disease. Routine sampling at the present time is not a practical consideration.

Much remains to be learned about Legionnaires' Disease, especially about the ecologic niche of the organism and its survival in the environment during non-epidemic periods. Rapid identification tests are needed, both for making the diagnosis in patients and also in handling environmental samples. Despite the persistence of unanswered questions, we now know a great deal about this disease. We know that it is not a new disease and that it is caused by fastidious gram negative bacteria. We know the type of patient that contracts the disease and we know it occurs both sporadically and in distinct outbreaks. We know that it is probably spread by airborne transmission from an environmental source. We know the signs and symptoms of the disease and how to treat it. Hopefully, in a Legionnaires' Disease update in the not-too-distant future, we will be able to answer some of the questions that have been raised in this brief summary.

REFERENCES

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IMMUNIZATIONS FOR FOREIGN TRAVEL

(No. 2 in Series)

YELLOW FEVER

Although yellow fever is not the threat it was at the beginning of this century, it still is active in tropical regions of South America and sub-Saharan Africa . Within the last 6 months, there have been 2 new outbreaks in Trinidad and the African country of Gambia. The United States Public Health Service recommends vaccination of all travelers going to these 2 outbreak areas.

Yellow fever is an acute viral disease of short duration and varying severity. Typical attacks are similar to dengue. There is sudden onset of fever, headache, backache, prostration, nausea, and vomiting. Complications include kidney failure, jaundice, and hemorrhagic manifestations, including nosebleeds, bloody vomitus, and bloody stools. The fatality rate in endemic areas is less than 5% but may reach 50% in non-indigenous groups or in epidemics.

There are two types of yellow fever which are indistinguishable clinically but have different modes of transmission. Urban yellow fever has man as the reservoir of infection and *Aedes aegypti* mosquitoes as the mode of transmission. This form of yellow fever is now relatively rare and has not been seen in the Americas since 1954. Jungle yellow fever is the predominant form present in the world today. It is transmitted by a variety of mosquito vectors among non-human hosts, particularly monkeys. People are infected as they work or travel in endemic jungle areas.

If a traveler's itinerary indicates that he or she will visit a yellow fever infected area in route, a few countries may require yellow fever vaccination. However, infected areas in South America are for the most part remote jungle regions and the usual tourist visiting capital cities in South America will not need to show proof of yellow fever vaccination.

Yellow fever vaccine is a live attenuated virus vaccine available only in specially designated yellow fever vaccination centers. Reactions are few and are usually mild. A single subcutaneous vaccination confers immunity and vaccination certificates are valid for a period of 10 years. The Connaught vaccine currently in use in Louisiana should not be given to children under six months of age, pregnant women, patients with altered immune states, or to people with proven hypersensitivity to eggs or chicken products.

The parish health units have further information concerning countries requiring vaccination and the yellow fever vaccination centers in Louisiana.

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SELECTED REPORTABLE DISEASES (By Place of Residence)

STATE AND PARISH TOTALS	VACCINE PREVENTABLE DISEASES					ASEPTIC MENINGITIS	HEPATITIS A AND UNSPECIFIED	HEPATITIS B	LEGIONNAIRES DISEASE	MALARIA**	MENINGOCOCCAL INFECTIONS	SHIGELLOSIS	TUBERCULOSIS, PULMONARY	TYPHOID FEVER	OTHER SALMONELLOSIS	UNDERNUTRITION SEVERE	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY	RABIES IN ANIMALS (PARISH TOTALS CUMULATIVE, 1979)
	MEASLES	RUBELLA*	MUMPS	PERTUSSIS	TETANUS														
Reported Morbidity April, 1979																			
TOTAL TO DATE 19 78	358	312	37	1	1	2	205	57	N.A.	3	43	27	169	0	13	3	7060	204	5
TOTAL TO DATE 19 79	170	21	24	6	0	17	226	78	0	3	86	16	203	0	37	2	7186	272	5
TOTAL THIS MONTH	27	6	7	1	0	0	51	20	0	2	15	3	40	0	5	0	1715	77	3
ACADIA								1					1				11		
ALLEN													1				5		
ASCENSION											1						5	1	
ASSUMPTION																	2		
AVOYELLES	2																4		
BEAUREGARD																	4	3	
BIENVILLE																	1		
BOSSIER	1						1	1					1				34	1	1
CADDO	3						2	3			2		4				160	1	1
CALCASIEU							3						4				53	3	
CALDWELL																	2		
CAMERON																			
CATAHOULA																	3		
CLAIBORNE																	4		
CONCORDIA																	2		
DESOTO																	3		
EAST BATON ROUGE		1					1										134	6	
EAST CARROLL																	11	1	
EAST FELICIANA													1				2		
EVANGELINE																	2		
FRANKLIN	1																4		
GRANT							1						1						
IBERIA								1			1				1		3	2	
IBERVILLE																	12		
JACKSON																			
JEFFERSON							11	1			3	1			1		76	3	
JEFFERSON DAVIS								1									3		
LAFAYETTE													1		1		33		
LAFOURCHE		1					4										9		
LASALLE																			
LINCOLN										1							6	1	
LIVINGSTON													1				6		
MADISON											1						20	2	
MOREHOUSE	1																14		
NATCHITOCHES																	34		
ORLEANS							14	9		1	1	2	11		1		710	25	
QUACHITA			7										1				73	6	
PLAQUEMINES							1								1		7		
POINTE COUPEE				1															
RAPIDES	12	4					1	1			1		5				80	8	
RED RIVER																			
RICHLAND																	6		
SABINE																	6		
ST. BERNARD							2										4		
ST. CHARLES								1									4		
ST. HELENA																			
ST. JAMES																	2		
ST. JOHN																	3		
ST. LANDRY							5						1				14		
ST. MARTIN											1						12		
ST. MARY													1				2	1	
ST. TAMMANY							1				1						25		
TANGIPAHOA							2				1						30	1	
TENSAS																		1	
TERREBONNE													2				17	2	
UNION													1				3		
VERMILION							1				2		1				1		
VERNON																	5	6	
WASHINGTON	5												1				9		
WEBSTER							1										10	1	1
WEST BATON ROUGE																	13	1	
WEST CARROLL								1									5		
WEST FELICIANA																	3		
WINN	2																2		
OUT OF STATE																	7	1	

* Includes Rubella, Congenital Syndrome.

** Acquired outside United States unless otherwise stated.

N.A. - Not Available

From January 1, through April 30, the following cases were also reported:

1 - Typhus Fever, Endemic; 10 - Trichinosis

SELECTED REPORTABLE DISEASES (By Place of Residence)

STATE AND PARISH TOTALS Reported Morbidity March, 1979	VACCINE PREVENTABLE DISEASES					ASEPTIC MENINGITIS	HEPATITIS A AND UNSPECIFIED	HEPATITIS B	LEGIONNAIRES DISEASE	MALARIA**	MENINGOCOCCAL INFECTIONS	SHIGELLOSIS	TUBERCULOSIS, PULMONARY	TYPHOID FEVER	OTHER SALMONELLOSIS	UNDERNUTRITION SEVERE	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY	RABIES IN ANIMALS (PARISH TOTALS CUMULATIVE, 1979)	
	MEASLES	RUBELLA*	MUMPS	PERTUSSIS	TETANUS															
TOTAL TO DATE 19 78	201	174	30	1	1	1	147	38	N.A.	3	27	20	138	0	10	3	5254	160	3	
TOTAL TO DATE 19 79	144	15	18	5	0	17	179	58	0	1	72	14	163	0	32	2	5482	199	2	
TOTAL THIS MONTH	88	10	8	1	0	7	78	22	0	1	24	6	60	0	13	2	1918	83	1	
ACADIA							2						2					7		
ALLEN	2																	4		
ASCENSION							1	3										11		
ASSUMPTION								1										15		
AVOUELLES																		6		
BEAUREGARD																		6		
BIENVILLE																		5	1	
BOSSIER		1											1					11		
CADDO							1				1	2	8					147	3	
CALCASIEU		1	1				1	1			2	1						97	6	
CALDWELL																		1		
CAMERON																		2		
CATAHOULA																		3		
CLAIBORNE										1								7		
CONCORDIA							2					1	1					3		
DESOTO																		8		
EAST BATON ROUGE		2		1			6				2							173	9	
EAST CARROLL							1	1										20	2	
EAST FELICIANA													1							
EVANGELINE																		1		
FRANKLIN													1							
GRANT	2						1											4		
IBERIA											4		2		2					
IBERVILLE													1					15	1	
JACKSON													1							
JEFFERSON			3			6	35	4			2	4	4	4	4		98	11		
JEFFERSON DAVIS	3												1		4			10		
LAFAYETTE						1	5	3			1	3	3		4			19		
LAFOURCHE							1											7		
LASALLE																		2		
LINCOLN							2	1										5		
LIVINGSTON																		3		
MADISON												2						10		
MOREHOUSE	2						1											8		
NATCHITOCHES																		11		
ORLEANS	1						3	3			4	13	13				879	34		
OUACHITA	44	2	4								1	4	4					81	2	
PLAQUEMINES							2											4		
POINTE COUPEE																		2		
RAPIDES	32	4											6					52	4	
RED RIVER											1									1
RICHLAND	1																	9		
SABINE																		3		
ST. BERNARD							4											4		
ST. CHARLES																		8		
ST. HELENA																		1		
ST. JAMES								1					1					12		
ST. JOHN																		4		
ST. LANDRY								1					2					9	3	
ST. MARTIN							1					3	3					8		
ST. MARY																		3		
ST. TAMMANY							6	1					1					9		
TANGIPAHOA							2				1					1		21		
TENSAS																		1		
TERREBONNE							1				4					1		12		
UNION	1															1		9		
VERMILION								1			1					1				
VERNON																		8	5	
WASHINGTON													2					12		
WEBSTER													2			1		15		1
WEST BATON ROUGE																		16	1	
WEST CARROLL																				
WEST FELICIANA																		18		
WINN								1												1
OUT OF STATE																		5		

* Includes Rubella, Congenital Syndrome.
** Acquired outside United States unless otherwise stated.

From January 1, thru March 31, the following cases were also reported:
1 - Typhus Fever, Endemic; 10 - Trichinosis.