Louisiana

LOUISIANA HEALTH AND HUMAN RESOURCES ADMINISTRATION
DIVISION OF HEALTH

MONTHLY MORBIDITY REPORT

Provisional Statistics

FROM THE

OFFICE OF PUBLIC HEALTH STATISTICS

REPORTED MORBIDITY
JUNE, 1976

LEPTOSPIROSIS - A DISEASE ENDEMIC TO SOUTHERN LOUISIANA - Part I

BY

RICHARD GREENBERG, M.D.
Epidemiology Unit
LouisianaDivision of Health

JAMES HELMKAMP, M.P.H.
Tulane University School of Public Health

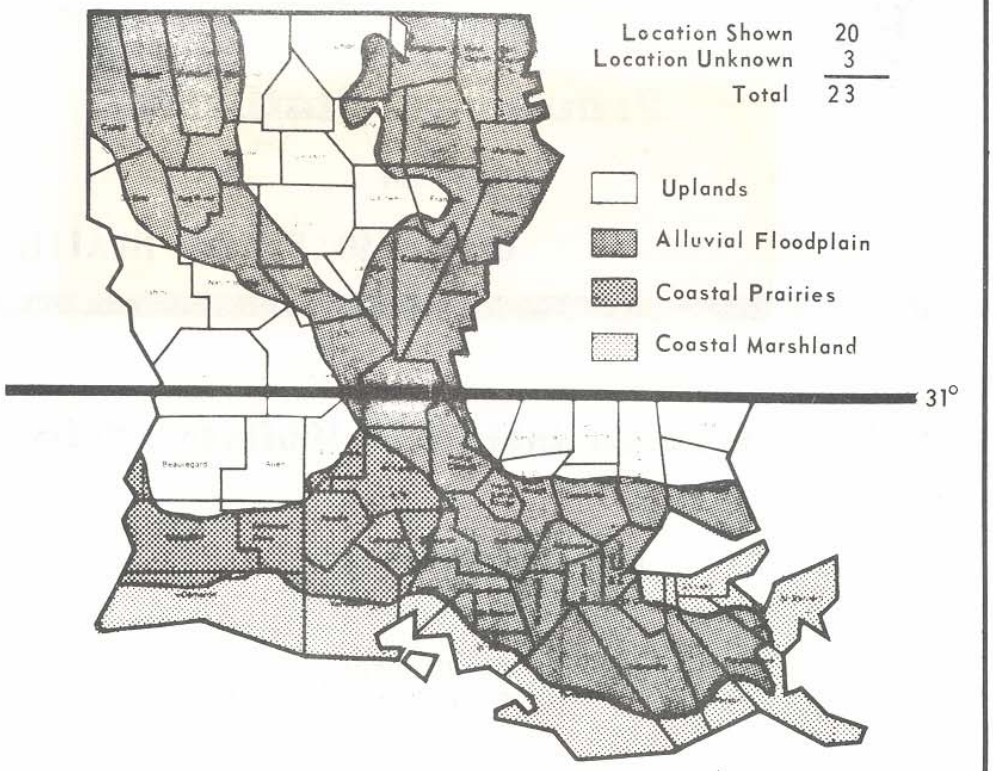
Twenty-three cases of human leptospirosis have been reported to state health officials during the period 1971 - 75. All of these cases lived below the 31st parallel at time of onset (See Figure I) and the majority of these patients mentioned animal or water contact either through occupational exposure or recreational activities in the weeks before the illness. Moreover, 14 of the 23 cases (61%) occurred during summer months. It is suggested by these data that water recreation or occupational exposure (e.g. rice field work), and animal contact in the low lands of southern Louisiana, especially during summer, be considered a potential exposure to leptospirosis organisms.

Leptospirosis is an infectious disease of domestic or wild animals which affects human beings when circumstances are favorable for direct or indirect transmission of the agent. The agent is a spirochete bacteria; it is recognized to be a "parasite" of both wild and domesticated animals and to have at least 24 different pathogenic serotypes.[1] In some instances there exists a symbiotic relationship between the leptospire and its animal host; this accounts for perpetuation of the organism in the animal community. In cases where this equilibrium is not established, the animal becomes ill.[1]

The proportions of infected animals in populations of a particular species vary greatly throughout the world. The intensity of infection in any animal species depends upon many factors, including the animal population density, the availability of a common water source, soil and climate conditions, and the proportion of young to old animals. Data now substantiate that a particular host animal may serve as a reservoir for one or more serotypes of leptospires and, conversely, that a given serotype may be hosted by multiple animal species.[1]

The transmission of leptospiral infection from animal to man occurs either directly by contact with blood, tissues, organs, or urine of infected animals, or indirectly, and perhaps more commonly, by exposure to an environment contaminated by leptospires. In either situation, man is a dead-end host; transmission from person-

Figure I: Reported Human Leptospirosis Cases
Louisiana, 1971-1975



to-person rarely occurs (See Figure II). Acquisition of leptospires by man usually takes place through breaks in the skin or via the mucous membranes, including conjunctivae, vagina, and nasopharynx.[1]

Fresh water has been recognized as an important vehicle for the transmission of leptospiral infections to man. Almost as early as the disease in man was described, its association with rat contaminated water was recognized.[3] The potential for water contamination is even more likely since leptospires are often "excreted" by a given animal for several weeks to several months during both the acute and the convalescent phase of infection. It is, therefore, not uncommon for completely asymptomatic animals to continue excreting leptospires for long periods of time. Also, under favorable conditions soil, especially in cane fields, becomes contaminated by rodents; and after rains, surface waters are probably more commonly contaminated by the migration of leptospires from soil than through direct contamination by animal carriers. In years past, names used to describe human leptospirosis reflect that the disease is related to work on flooded or irrigated lands: mud fever, rice field fever, canecutters disease, swineherds disease . . . .

Human leptospirosis has been recognized in all parts of the country, with the majority of cases usually being reported from southern states. Louisiana data are compared to United States data in Table I. Most cases in the United States between 1971 and 1974 occurred in males (77%), and a seasonal incidence was apparent (55% of cases occurred between July and October). Louisiana data for 1971-75 are similar; 74% were male and 65% of cases occurred between July and October. In 21 of 23 cases, ages were given. These ranged from 7 years to 67 years; twelve (52%) were under 30 years.

Table II summarizes the 1971-75 Louisiana cases by probable source and infecting serogroup as indicated by laboratory studies. Icterohemorrhagiae accounted for the most cases, 10 of

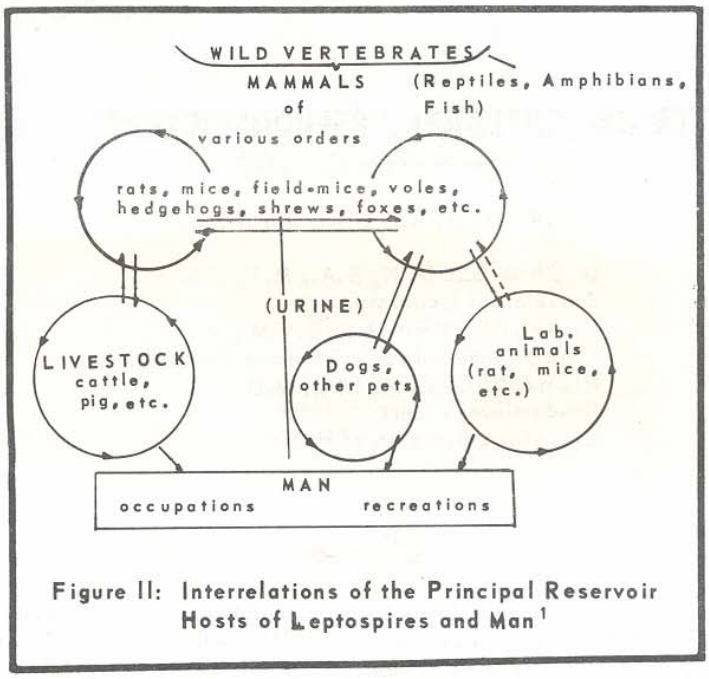


Figure II: Interrelations of the Principal Reservoir Hosts of Leptospires and Man[1]

23 (43%); however, 8 other serogroups were identified. Animal exposure (e.g. dog, rodents, cattle, swine) was mentioned in 57% of cases (13 of 23) and water in 27% of cases (5 of 23).

Eight cases (34%) occurred in persons whose occupations involved animal and/or water contact (rice field workers - 4, dairy farmers - 2, meat inspectors - 1, and geologic surveyors - 1). Twelve other cases (52%) mentioned recreational water activities in fresh water areas in the weeks before illness: Swimming - 5, skiing - 2, bull-frogging - 2, trapping and skinning - 1, hunting - 1, and fishing - 1. These data, too, reflect the general trends seen in the United States, especially as more and more rural areas are being developed into farms or recreational areas.

The unique finding in our data is that all cases reported to health officials involved patients living below the 31st parallel (See Figure I). The topography of this area - mostly alluvial floodplains, coastal prairie, or coastal marshlands - is probably an important factor for the perpetuation of leptospirea in this area.

REFERENCE:

1. Feigin, R.D. and Anderson, D.C.: Human leptospirosis. *Critical Reviews in Clinical Laboratory Sciences*, 5:413 - 467, 1975.
2. Turner, L.H.: *British Medical Journal*, 1:537, 1973.
3. Inada, R. et al.: The etiology, mode of infection and specific therapy of Weil's disease. *J. Exp. Med.* 23:377, 1916.
4. *Center for Disease Control: Leptospirosis Surveillance, Annual Summaries* 1971-1974. United States Department of Health, Education, and Welfare.
5. Boyce, J.: Personal Communication.

Table I
REPORTED HUMAN LEPTOSPIROSIS CASES
UNITED STATES AND LOUISIANA
1971 - 1975

YEAR	UNITED STATES CASES	LOUISIANA CASES	LOUISIANA PERCENT OF TOTAL
1971	68	4	6
1972	103	2	2
1973	77	2	3
1974	93	4	4
1975	100*	11	11
TOTAL	441	23	5

* Preliminary figures

Table II
HUMAN LEPTOSPIROSIS CASES BY PROBABLE SOURCE
AND PRESUMPTIVE INFECTING SEROGROUP
LOUISIANA, 1971 - 1975

MOST PROBABLE SOURCE	BALLUM	CANICOLA	ICTERO-HEMORRHAGIAE	COPENHAGENI	MANKARSO	AUTUMNALIS	POMONA	HEBDOMADIS WOLFFI	GEORGIA	UNKNOWN	TOTAL
DOG	1	1	2							1	5
RODENTS			2		1						3
CATTLE/SWINE			1			1		1			3
WATER			2	1	1				1		5
OTHER			1	1							2
UNKNOWN			2			1	1			1	5
TOTAL	1	1	10	2	2	2	1	1	1	2	23

MYCOBACTERIUM CHELONEI "PSEUDOEPIDEMIC" - NEW ORLEANS

HENRY BENEDA, B.A., M.P.H.

GLORIA DUDDEN, B.A., M.T. (ASCP)
Division of Laboratories
CHARLES CARAWAY, D.V.M., M.P.H.
Chief, Communicable Disease Control Section
RICHARD GREENBERG, M.D.
Epidemiology Unit
Louisiana Division of Health

Between December 1, 1975, and March 1, 1976, the State's mycobacteria laboratory reported isolating 13 separate cultures of M. chelonei from specimens submitted to them by one private hospital located in New Orleans.

A review of the State's experience with this atypical mycobacterium showed that between November, 1973, and November, 1975, only 3 isolations had been made from specimens submitted by this hospital, that 23 isolations had been made from other New Orleans hospitals during 1975-76, and that statewide, excluding New Orleans, 24 isolations had been made during 1975-76. This information suggested an unusual amount of isolations of this organism at the private New Orleans hospital.

An investigation showed (1) that none of the 13 patients were ill because of this organism, (2) that specimens which grew the organism included sputa, bronchial washings, and urine, (3) that specimens were sent to the laboratory from all areas of the hospital and in different types of containers, (4) that no common exposure in the hospital could be found for these patients, and (5) that these people lived in different areas about New Orleans and were employed in different jobs. Reviewing all records of this hospital's laboratory specimens handled for Tbc culture between December, 1975 - March, 1976, the positivity rate for M. chelonei was 15%. All specimens for Tbc were handled by one technician who digested these specimens with a NAC solution, a NaOH solution, and a weak acid solution, then buffered the specimen with a NAC solution and then plated. All the solutions were stock solutions and not prepared daily.

Our investigation of the laboratory began nearly 6 weeks after the last isolation of M. chelonei. Moreover, chances appear slim that we will recover the organism as all water sources have been serviced (deionizing resins have been changed and tanks have been flushed with acid) and stock solutions have been changed. Nevertheless, we have cultured a variety of materials used in the digestion procedure and are attempting to culture the water used in the lab (i.e. we are filtering 1 to 2 liters of it and culturing the filters). To date no M. chelonei have been recovered from our specimens.

M. chelonei, like M. fortuitum, is a fast growing mycobacteria of Runyon Group IV. Both organisms are ubiquitus, normally harmless, facultative pathogens. They are differentiated by the nitrate reduction test with M. chelonei nitrate reduction negative and M. fortuitum positive. Both have been described in several injection abscess epidemics. M. chelonei has been cultured from pathology laboratory water tanks.[1]

REFERENCE

1. Ward, J.A.: M. fortuitum and M. chelonei - fast growing Mycobacteria. *British Journal of Dermatology*, 92, 453, (1975).

TREATMENT OF HYPERTENSION

Colorado Comummicable Disease Bulletin
Vol. No 8

From:
Colorado Communicable Disease Bulletin
Vol. No. IV, Issue No. 19
May 15, 1976

THE PRIMARY GOAL OF HYPERTENSION MANAGEMENT IS TO REDUCE DIASTOLIC PRESSURE TO NORMAL (LESS THAN 90 mm Hg) OR NEAR NORMAL (LESS THAN 100 mm Hg) AS SAFELY, SIMPLY, AND QUICKLY AS POSSIBLE WITH THE FEWEST DRUGS, AT THE LOWEST DOSAGE, WITH THE LEAST SIDE EFFECTS, AT THE LEAST COST.

Life style changes – – regular exercise, weight loss, salt restriction, abstinence from tobacco and dietary control of cholesterol – – will suffice in some patients. Most patients will require medical therapy for adequate control. Although the following guidelines are generally applicable, a physician may wish to modify them in individual cases. For example, patients with complications or additional cardiovascular risk factors may be treated although their diastolic pressures do not usually call for specific anti-hypertensive therapy.

The "Stepped Care" Drug Therapy Approach: This simply calls for an initial small dose of an individual drug followed, as required, by higher doses and then adding additional drugs as indicated. Regular re-evaluation of patient's pressure is important to determine the lowest optimal dose consistent with adequate pressure control.

Drug Side Effects: Drug therapy may produce side effects. Patients should be forewarned and counseled about the importance of remaining on therapy. Since management of hypertension is a life-long endeavor, patient awareness and co-operation are vital. Every effort should be made to adjust drugs and dosages to minimize side effects (regimens outlined here are designed to provide optimal control with least side effects).

Specific Therapeutic Guidelines: Four patient groups have been arbitrarily identified on the basis of average diastolic pressure:

Group 1 (Average pressure 95-105 mm Hg)

Group 2 (Average pressure 106-120 mm Hg)

Group 3 (Average pressure 121-140 mm Hg)

Group 4 (Average pressure over 140 mm Hg)

GROUP 1 patients may be controlled by the life style changes mentioned previously. The physician may choose drug therapy for these patients if hypertension complications or other cardiovascular risk factors are present.

GROUP 2 patients almost always require drug therapy. The following 3-step approach is recommended:

Step 1: Start with a thiazide diuretic at half dose and increase to full dose if needed. Potassium depletion, should it occur, is best treated by potassium supplement (not enteric-coated potassium preparations! ! ! !).

Step 2: If satisfactory pressure reduction is not reached with diuretic therapy alone, an additional drug should be introduced – – there are 3 choices. Selection should consider limitations and mode of action. Reserpine can cause drowsiness, depression and inability to concentrate. Methyldopa can also cause drowsiness and is subject to the development of "tolerance". Hydralizine increases cardiac work load and must be used with caution in patients with angina. Also, drugs interfering with sympathetic or para-sympathetic activity (guanethidine, reserpine, and methyldopa) may cause impotence. Whichever agent is used, begin with half-dosage and increase as necessary. Two drugs are usually sufficient.

DRUG DOSE RECOMMENDATIONS
FOR PATIENTS WITH AVERAGE DIASTOLIC PRESSURE
106-120 mm Hg (GROUP 2) and 121-140 mm Hg (GROUP)*

	GROUP 2 Diastolic Pressure 106-120 mm Hg		GROUP 3 Diastolic Pressure 121-140 mm Hg	
Drug Dosage	Initial dose (mg/day)	Maximum dose (mg/day)	Initial dose (mg/day)	Maximum dose (mg/day)
Diuretics[1]	(Begin with half dose and increase in 1 step to full dose if needed)		(Begin with full dose)	
Reserpine[1]	0.1	0.25	0.1	0.25
Methyldopa[2]	500	2000	750	3000
Hydralazine[2]	30	200	75	300

* Before prescribing, see manufacturer's full prescribing information.
1 Can be given in single daily doses
2 Should be given in 2-4 divided doses

Step 3: If satisfactory pressure reduction is not achieved with 2 drugs, a third should be added. After pressure has been satisfactorily reduced, combination drugs can be prescribed.

MONITORING IS NECESSARY THROUGHOUT ALL PHASES OF THERAPY, INCLUDING MAINTENANCE.

GROUP 3 patients have more severe hypertension than groups 1 or 2. Their care is more difficult and urgent. The following guidelines are recommended:

a Start with thiazide diuretic at full dose.

b Shorten intervals between changes in regimen.

c Increase to maximum doses of various drugs.

GROUP 4 patients require immediate hospitalization and urgent treatment since very high pressures must be brought down promptly. A specialist is recommended. See dosage recommendations below.

REFERENCES

1. Page, L.B., Sidd, J.J.: Medical management of primary hypertension. *N Eng J Med* 287: 960-966, and 1018-1023, and 1074-1080, 1972.
2. *Guidelines for the Evaluation and Management of the Hypertensive Patient.* High Blood Pressure Information Center, National Institutes of Health.

SELECTED REPORTABLE DISEASES

(By Place of Residence)

STATE AND PARISH TOTALS Reported Morbidity June, 1976	ASEPTIC MENINGITIS	DIPHTHERIA	ENCEPHALITIS	ENCEPHALITIS, POST INFECTIOUS	HEPATITIS A AND UNSPECIFIED	HEPATITIS B	TUBERCULOSIS, PULMONARY	MENINGOCOCCAL INFECTIONS	PERTUSSIS	RABIES IN ANIMALS	RUBELLA*	SEVERE UNDERNUTRITION	SHIGELLOSIS	TYPHOID FEVER	OTHER SALMONELLOSIS	TETANUS	MEASLES	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY
TOTAL TO DATE 1975	59	0	15	10	244	83	262	23	20	3	274	9	72	2	67	3	0	10934	258
TOTAL TO DATE 1976	28	0	7	4	248	71	283	30	2	2	87	9	34	2	44	2	177	9723	316
TOTAL THIS MONTH	4	0	2	1	57	17	38	10	1	2	3	2	6	2	10	1	23	2153	74
ACADIA					3	1												10	
ALLEN															1			1	1
ASCENSION												1						2	2
ASSUMPTION				1				1										2	
AVOYELLES																		6	1
BEAUREGARD																		4	1
BIENVILLE																		5	
BOSSIER										1								26	2
CADDO					4		5	1						1	4			208	5
CALCASIEU					1		2						1					107	1
CALDWELL																			
CAMERON																			
CATAHOULA							1											2	
CLAIBORNE																		4	
CONCORDIA							2											3	
DESOTO							1											10	
EAST BATON ROUGE					4		3								4			87	7
EAST CARROLL							1											5	
EAST FELICIANA																		1	
EVANGELINE					1		2											3	
FRANKLIN																		1	
GRANT							4											13	2
IBERIA																		7	
IBERVILLE																			1
JACKSON																			2
JEFFERSON	2		1		5	1					1		3		1		17	117	
JEFFERSON DAVIS																		5	
LAFAYETTE					1		1			1	1							53	4
LAFOURCHE					2													29	2
LASALLE																		1	
LINCOLN																		15	
LIVINGSTON					1	1												7	
MADISON									1									23	
MOREHOUSE																		21	
NATCHITOCHES																		11	
ORLEANS	1		1		14	9	7	4			1		1			1	3	835	28
OUACHITA					3		2							1			3	81	9
PLAQUEMINES																		7	
POINTE COUPEE																		1	
RAPIDES	1				1			1										77	
RED RIVER																		3	
RICHLAND																			
SABINE					1													7	2
ST. BERNARD					2	1	1											6	
ST. CHARLES												1						13	
ST. HELENA																		4	
ST. JAMES																		9	
ST. JOHN								1										9	
ST. LANDRY					3	2	3											25	1
ST. MARTIN					1													8	1
ST. MARY					1													5	
ST. TAMMANY					2	1												34	
TANGIPAHOA					5													30	
TENSAS																			
TERREBONNE								1										17	
UNION																		6	
VERMILION					2	1												5	
VERNON							1	1										65	2
WASHINGTON						•	2											22	
WEBSTER																		34	
WEST BATON ROUGE																		14	
WEST CARROLL													1					1	
WEST FELICIANA																		42	
WINN																		3	
OUT OF STATE																		1	

* Includes Rubella, Congenital Syndrome

From January 1 through June 30, the following cases were also reported: 4-Brucellosis; 2-Leptospirosis