



MONTHLY MORBIDITY REPORT

Provisional Statistics

Reported Morbidity
August, 1978

from
EPIDEMIOLOGY UNIT AND PUBLIC HEALTH STATISTICS

1978 UPDATE - MENINGOCOCCAL DISEASE IN LOUISIANA

LOUISIANA DEPARTMENT (1/1/78-7/31/78)
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Donald Allegra, M.D.
EIS Officer
Epidemiology Unit

BATON ROUGE, LA

Meningococcal Disease is the single most frequent etiologically identified infective cause of death in young children.

Each year Louisiana has one of the highest rates of meningococcal disease in the country. In 1977, our state had not only the highest attack rate (3.7/100,000) but also the highest total number of cases (151). Although numerically Florida, Texas, and California have reported more cases so far this year, Louisiana with 102 cases to date continues to have the highest attack rates. Meningococcal disease is scattered about the nation and there is no easily definable geographic pattern that emerges.

In the last two years, the number of cases has dramatically increased. Meningococcal disease has appeared in peak numbers at approximately 10-12 year cycles (Figure 1). The earlier peaks were, in general, due to large outbreaks of meningococcus Type A, especially in military personnel. As can be seen in Table 1, the vast majority of cases now (approximately 85%) are Type B and no Type A has been isolated. This has epidemiological importance since there are vaccines for Types A and C but not for B. Compared to a comparable period in 1977, Type Y has increased from 1 to 8%, Type C stayed about 6%, and Type B decreased slightly from 92% to 85%. More than 90% of Type B and Y disease strains are sensitive to sulfa but less than half of the C strains traditionally are sensitive to sulfa.

One hundred and two cases had onset of meningococcal disease in the first seven months of this year. A similar number appeared in the same interval last year. This is greater than the 94 reported in the morbidity profiles because it includes cases reported in August with onset in July.

As can be observed from the characteristics of the 1978 cases mentioned above, about 70% of cases occurred in the under 5 age group (especially in the under 1 year age group) and the percentage of cases decreased with increasing age. Females outnumber males this year but in the past the sex distribution has been equal. Whites outnumber blacks in total number of cases but the attack rate among blacks is 1.7 times that of whites.

There were 3 secondary cases (defined as a case of the same serotype developing in a contact between 24 hours and 30 days following the first case). One had been treated with prophylactic rifampin and 2 were not treated.

Secondary attack rates among household contacts (assuming 4 in each household) were 0.75% (3/400) which fits the traditional teaching that attack rate among close contacts is much higher than for the population-at-large. Looked at another way, 3% of the cases this year appear to be secondary cases in close contacts compared with 4% last year. Meningococcus usually has its highest prevalence in the winter months, especially January and February. This year, however the peak incidence occurred in March (24 cases). The breakdown of cases and deaths by parish for the first 7 months of 1977 and 1978 is displayed in Figure 2. The majority of cases have occurred in the southeastern part of the state. Interestingly, 21% of the cases reported so far this year are from the northern half of the state (this compares to about 11% last year). Whether this represents a true increase in cases in the northern half of the state, or is due to increased reporting secondary to intensified surveillance, is unclear.

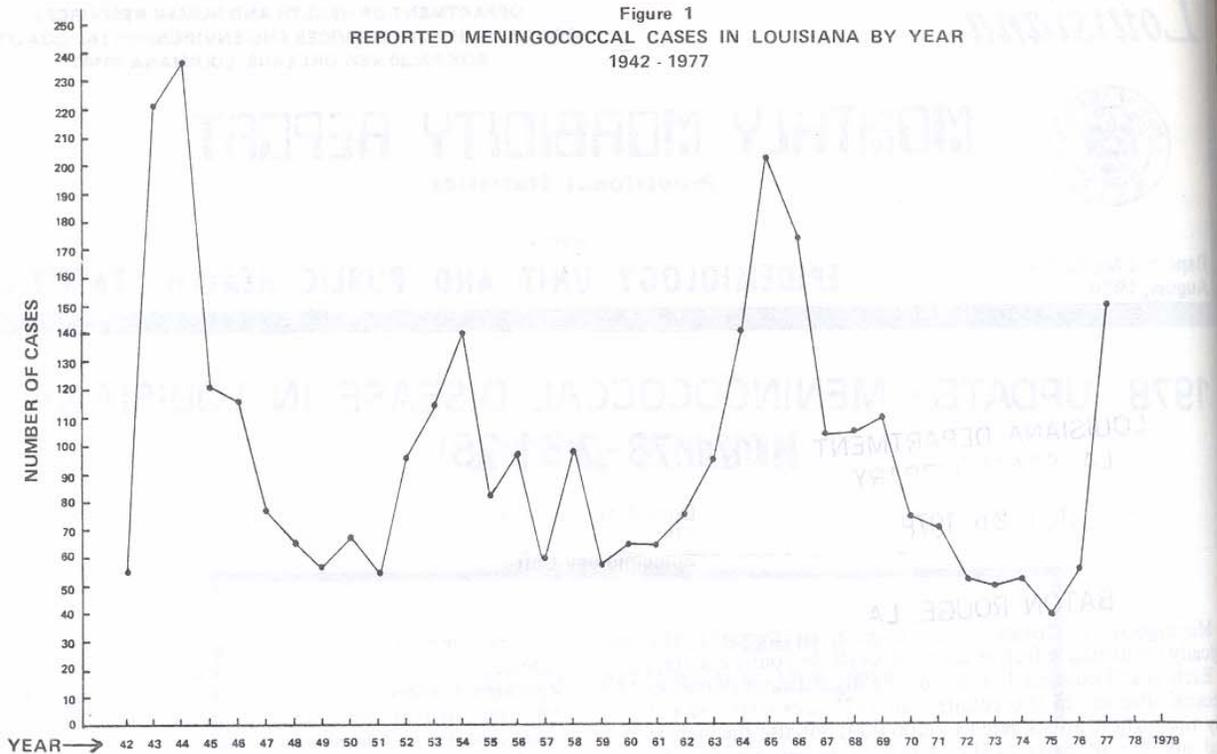
There have been 14 deaths this year in 102 cases for a case fatality rate of 13.7%, which is slightly higher than the 12.7% rate in 1977.

The data in Table 1 demonstrate that although the disease is least common in the older age groups, case fatality rates are highest in these groups. Recently the State Epidemiology Unit completed a survey of major contributing causes of death in 18 intensively studied cases from 12/76 to 1/78.¹ The 18 cases were divided into 7 categories according to what was felt to be the major contributing cause of death:

TABLE 1

Age:	12 mos.	23.8%	8.3%
	1-5 yrs.	45.5%	2.2%
	6-15 yrs.	12.9%	15.4%
	16-30 yrs.	8.9%	0.0%
	31-60 yrs.	7.9%	50.0%
	> 60 yrs.	1.0%	0.0%
Sex:	Male - 42.1%		
	Female - 57.8%		
Race:	White-Projected attack rate/100,000 population/year = 3.6		
	Black-Projected attack rate/100,000 population/year = 6.0		
Typing:	1/1/78-7/31/78	12/1/76-5/31/77	
	B - 85.5%	92.0%	
	C - 6.3%	6.0%	
	Y - 8.3%	1.0%	

Figure 1
REPORTED MENINGOCOCCAL CASES IN LOUISIANA BY YEAR
 1942 - 1977



Category	Number of Cases
1. fulminant disease - no time for adequate therapy	4
2. patient late in seeking medical attention	1
3. delayed or wrong diagnosis leading to inadequate therapy	8 *
4. transfer of ill patient to referral hospital	0 **
5. poor underlying condition	0
6. died at home, no treatment	3
7. adequate therapy - no explanation	2
	<u>18</u>

* Seven of these patients went on to fulminant course, including 4 in which time from first symptom to death was 24 hours.

** Three patients were transferred in shock, possible deleterious effect of transfer not documented.

The important factor involving 8 cases was delayed or wrong diagnosis. Seven of these cases went on to follow a fulminant course, including 4 in which less than 24 hours elapsed between first symptoms and death. In most of these cases, children presented with non-specific symptoms of fever and lethargy but without skin rash or stiff neck. The cases were not treated with parenteral antibiotics, and later (within a few hours in several cases but after several days in others) they began a fulminant course which could not be reversed. Four cases were fulminant with no chance of adequate therapy. Three cases died at home without adequate treatment. One death was related to the patient not receiving medical attention because she was critically ill. Two cases died despite adequate treatment. Although transfer of a patient was not felt to be the primary contributing cause of death in any case, 3 patients were transferred in shock and this may have contributed to their demise. A 4th patient died while in transfer and no other information has become available. In summary,

44.4% of the case deaths analyzed were probably due to inappropriate or delayed treatment. The diagnosis of meningococemia can be very difficult when patients present with only non-specific symptoms. Also, very few physicians are likely to see even 1 case a year during peak incidence years. We are trying to increase physician awareness of this disease since early diagnosis and treatment is the key to reducing mortality. Meningococcal disease is a medical emergency and waiting for cultures to return or transferring patients to another hospital before treatment is instituted can endanger lives since even a few hours delay in treatment can increase mortality.

Below are the most recent recommendations for the management of cases and contacts of meningococcal disease. They are the consensus opinion of a panel of Louisiana infectious disease consultants who met on March 3, 1977.

1. Household contacts (especially children under 5 years of age), romantic contacts, and persons who have given mouth-to-mouth resuscitation to cases of meningococcal diseases should be placed under close clinical surveillance. Objective signs of illness in contacts, such as fever, headache, sore throat, exanthem, otitis, or stiff neck warrant immediate medical evaluation for possible meningococcal infection, regardless of whether or not chemoprophylaxis has been given.
2. There is no evidence that school room, school bus, office, hospital, or other casual type contact with a case places a person at any higher risk of developing the disease than other persons in the general population. Nursery schools and day care centers are an exception to this statement; nursery school or day care center classmates of a case should be regarded as household contacts and observed very closely whether or not chemoprophylaxis (see numbers 1 and 4) is used.
3. When a case of meningococcal disease occurs in a school (other than a day care center or nursery school), it is not necessary for school officials to send notices home to the parents of asymptomatic children nor to suggest that they

seek prophylaxis. Such actions are unwarranted and are often responsible for creating community confusion bordering on panic. School officials should consult the local health unit for advice.

4. When a case of meningococcal disease occurs in a day care center or nursery school, that facility's officials should consult their local health unit for advice and notify parents, asking them to consult their own physicians for advice regarding further precautions to be taken.
5. There is currently no ideal chemoprophylaxis for meningococcal disease. Rifampin may be used, and has been recommended for household and other intimate contacts (kissing, mouth-to-mouth resuscitation) by the Center for Disease Control, United States Public Health Service. It has been shown to be 80%-90% effective in eradicating the carrier state, but data do not currently exist to prove its efficacy in preventing secondary cases. Because of the persistence of sulfa-resistant strains, sulfonamides are not currently recommended, unless the strain causing a case or an outbreak is known to be sulfa sensitive. Chemoprophylaxis for contacts should not substitute for close surveillance of those contacts. Rifampin is given every 12 hours for four doses in a dosage of 600 mg for adults, 10 mg/kg for children 1-12, and 5 mg/kg for children under 1. Sulfonamides are given for two days: 1 gram every 12 hours for adults, 500 mg every 12 hours for children 1-12, and 500 mg every 24 hours for children under 1. Sulfonamides are contraindicated for use in infants under 2 months of age. Minocycline is currently felt to be unacceptable in chemoprophylaxis of meningococcal infection because of the incidence of vestibular reactions following minocycline administration.

Penicillin, though the drug of choice for treatment of cases, is not suitable for chemoprophylaxis. Cases of meningococcal meningitis have been observed to develop in patients receiving penicillin "prophylaxis." Ampicillin, erythromycin, oxytetracycline, chloramphenicol, cephalixin, doxycycline, nalidixic acid, and immune serum globulin have been demonstrated to be of little or no value in eliminating meningococci from the asymptomatic subject, and are not recommended.

6. Neisseria meningitidis cultured from blood, spinal fluid, skin lesions, or other sites from symptomatic patients, should be forwarded to the Central Laboratory of the Office of Health Services and Environmental Quality for serogrouping. The address is: 325 Loyola Avenue, New Orleans, Louisiana 70112.

When Group A or C is identified, physicians should consider immunizing household and other intimate contacts with Group A or Group C vaccine, which are now

commercially available. Physicians should be aware that the vaccines are probably not efficacious in children under 2 years of age. Since 50% of cases of contacts of meningococcal disease occur within one week of contact, and since the vaccines do not induce immunity until one week after administration, the vaccine is not a substitute for chemoprophylaxis or close observation.

7. Nasopharyngeal cultures from asymptomatic contacts of cases serve no useful purpose, because if chemoprophylaxis of household contacts were employed, it should be used before the results of cultures of contacts are known.
8. When a case of meningococcal disease is diagnosed, the patient should be treated immediately with the indicated intravenous antibiotic in the closest appropriate local hospital. If it becomes necessary to transfer a diagnosed or suspected case, immediate local treatment should not be withheld, but should be continued until the patient's condition is stable enough to allow for safe transfer.
9. Crystalline penicillin G is the drug of choice for treatment of meningococcal disease. The recommended dose for children is 400,000 units/kg/day in divided intravenous doses, or 15 to 20 million units intravenously per day for adults. For patients sensitive to penicillin, the treatment of choice is chloramphenicol 100 mg/kg/day in 4 divided intravenous doses for children, or approximately 4 grams/day for adults.
10. Rifampin, if used, is only for prophylaxis. It is not effective for treating active meningococcal disease.
11. If Neisseria meningitidis is discovered as an incidental finding on a throat culture done for another purpose in a person without recent exposure to meningococcal disease, no treatment is indicated.
12. When a person dies with meningococcal disease, there is no justification for requiring a closed casket funeral nor for restricting attendance at the funeral of the deceased.

References:

1. Unpublished Date - Donald Beu and Gregory Storch
2. Louisiana Monthly Morbidity Report - 5/77
3. Meningococcal Meningitis following Rifampin Prophylaxis, N. Khuin Bulos, AJ Dis Child., Vol 126, Nov 1973, p 689-691
4. Prophylaxis for Meningococcal Disease, M. Artenstein, JAMA, Mar 10, 1975, Vol 231, No. 10, p 1035-1037
5. Meningococcal Disease Surveillance Group, 1974 Meningococcal Disease, JAMA, Jan 19, 1976, Vol 235, No. 3, p 261-265

ALERT: DENGUE FEVER

In 1977, there was a major epidemic of dengue fever in the Caribbean and this year large numbers of cases continue to be reported from Puerto Rico and recently from Honduras. Thirty-six suspected cases imported in 1978 into the United States have been reported to the Center for Disease Control. Louisiana has had no imported cases this year but since we do have close contacts with the Caribbean and Central America, the potential for imported cases is high. Particularly worrisome is the fact that Louisiana and other southeastern states have large populations of the insect vector of dengue (Aedes aegypti) and the potential for this mosquito to bite an imported dengue case and secondarily spread the disease is real.

There is no vaccine against dengue and travelers to the Caribbean should take precautions to avoid mosquito bites. Dengue should be suspected in any traveler to the Caribbean or Central America who develops, within 2 weeks of returning to the U.S., an acute febrile illness characterized by severe headache, joint and muscle aches, and sometimes rash appearing 3-4 days after fever. The disease is usually mild and self-limited but may persist for a week or more. Please obtain acute and convalescent sera 2 weeks apart and immediately report suspected dengue cases to Parish or State Health Department (504-568-5005)

SELECTED REPORTABLE DISEASES

(By Place of Residence)

STATE AND PARISH TOTALS	ASEPTIC MENINGITIS	DIPHTHERIA	ENCEPHALITIS	ENCEPHALITIS, POST INFECTIONOUS	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
Reported Morbidity August, 1978																		
TOTAL TO DATE 1977	13	0	8	0	408	101	390	80	5	18	27	4	68	0	79	1	74	11964
TOTAL TO DATE 1978	75	0	7	1	500	145	350	116	4	12	486	9	79	3	90	1	341	14978
TOTAL THIS MONTH	26	0	4	0	101	35	46	23	0	1	3	2	10	0	27	0	21	2343
ACADIA			2		1	1												32
ALLEN																		2
ASCENSION					1		1											9
ASSUMPTION	1							1										5
AVOUELLES							1											4
BEAUREGARD																		9
BIENVILLE																		4
BOSSIER																		22
CADDO	1				3	5	4	1							2		3	280
CALCASIEU					3	2									5			114
CALDWELL																		4
CAMERON							1								4			1
CATAHOULA																		
CLAIBORNE					1		1											21
CONCORDIA																		1
DESOTO																		17
EAST BATON ROUGE					5	1		1					2		1		1	203
EAST CARROLL																		1
EAST FELICIANA					2							1						
EVANGELINE																		2
FRANKLIN																		3
GRANT						1												12
IBERIA							1											2
IBERVILLE																	1	12
JACKSON																		4
JEFFERSON	9		1		31	7	2	6			3		1		1		12	116
JEFFERSON DAVIS					1													15
LAFAYETTE	6				4	5	7	3							2		1	80
LAFOURCHE	1				1	2									1			13
LASALLE																		
LINCOLN																		22
LIVINGSTON					1		1											2
WADISON					5													9
MOREHOUSE							1					1			2			25
NATCHITOCHES							1											2
ORLEANS	3				24	4	16	3					2		3		1	797
OUACHITA	1							2										143
PLAQUEMINES								2										8
POINTE COUPEE								2										2
RAPIDES					3		3								3			120
RED RIVER															1			3
RICHLAND																		
SABINE					2													4
ST. BERNARD					1		1								1			7
ST. CHARLES															1			6
ST. HELENA																		3
ST. JAMES					1													2
ST. JOHN																		6
ST. LANDRY					4	2												14
ST. MARTIN	3				1		1											4
ST. MARY																		3
ST. TAMMANY	1				1	1												24
TANGIPAHOA					1		1	1										24
TENSAS																		
TERREBONNE						1		1										16
UNION																		7
VERMILION					1	1		2		1							1	9
VERNON																		7
WASHINGTON			1		2		1											28
WEBSTER					1	1	1						5					39
WEST BATON ROUGE																		12
WEST CARROLL						1												1
WEST FELICIANA							1											2
WINN																		
OUT OF STATE																		4

* Includes Rubella, Congenital Syndrome

From January 1 through August 31, 1978, the following cases were also reported: 1-Brucellosis; 3-Malaria (contracted outside the U.S.A.); 2-Psittacosis; 3-Leptospirosis; 1-Rocky Mountain Spotted Fever; 1-Histoplasmosis.