

# Louisiana



REPORTED MORBIDITY  
SEPTEMBER, 1977

## MONTHLY MORBIDITY REPORT

### Provisional Statistics

FROM THE

OFFICE OF PUBLIC HEALTH STATISTICS

LOUISIANA HEALTH AND HUMAN  
RESOURCES ADMINISTRATION  
DIVISION OF HEALTH

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TULANE UNIV.  
RUBENPH MARLAS

### DAY CARE CENTER ASSOCIATED

#### VIRAL HEPATITIS

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In recent years large numbers of day care centers have opened in response to the continuing movement of women into the work force. In summer, 1977, approximately 313 day care centers were operating in Orleans and Jefferson parishes. These centers bring together large numbers of young children ranging in age from a few months to elementary school age. The intimate contact which occurs among such groups of young children facilitates transmission of numerous illnesses. Hepatitis A, like other enteric diseases, can spread widely and rapidly among groups of young children in day care centers who are first learning the rudiments of personal hygiene.<sup>1,2</sup> Because of the mildness of hepatitis A in young children, these outbreaks have the curious characteristic that they are often not appreciated until the outbreak spreads out of the day care center in the form of symptomatic hepatitis in older family members. Recent work by the Epidemiology Unit indicates that such outbreaks may be an important part of the hepatitis A problem in Louisiana.

Between September, 1976 and July, 1977 the

Epidemiology Unit has investigated seven day care center outbreaks of hepatitis A in the New Orleans area. In each of these instances, morbidity among children was minimal, whereas morbidity among family members was considerable. In no instance was the magnitude of the outbreak appreciated until after the Epidemiology Unit's investigation, which involved surveying all families with children in the affected day care center to learn of cases within the families. In fact, discovering the outbreaks at all is difficult. The mode of discovery by the Epidemiology Unit has varied. In three instances a person who was a case or family member of a case reported the outbreak to the Epidemiology Unit. In two instances, routine investigation of reported cases lead to discovery of day care center outbreaks. One outbreak was discovered in following up an inquiry about hepatitis in a co-worker, and one was discovered in the process of investigating a different day care center. In no instance has a practicing physician brought one of these outbreaks to the health department's attention.

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#### BULLETINS

##### RABID BAT BITE

A young child was bitten by a bat in the Monroe area in mid-September. The bat proved rabid and the child is undergoing rabies vaccination. Bites from wild animals, especially bats, skunks, raccoons, and foxes are highly suspect. Obtaining the brain of the biting animal is extremely important, because a negative examination means rabies vaccination need not be given. Best treatment includes immediate wound care, human (not equine) rabies immune globulin and vaccination. Serum should be drawn 30 days after the bite for measurement of rabies antibody.

##### ANTIBIOTIC RESISTANT PNEUMOCOCCUS - SOUTH AFRICA

In May and June, 1977 pneumococcus type 19A (Danish nomenclature; type 57 in American nomenclature) resistant to penicillin, ampicillin, cephalothin, chloramphenicol, erythromycin, gentamicin and others was isolated in Durban and Johannesburg, South Africa, from pediatric patients with meningitis, pneumonia, and bacteremia. The organism spread rapidly within the Isolation Hospital in Johannesburg. Although similar organisms have not yet been isolated outside of South Africa, physicians should be on the alert for pneumococci which do not respond to

penicillin and immediately perform antibiotic sensitivity testing if resistance is suspected.

##### DENGUE - PUERTO RICO

Widespread dengue is occurring in Puerto Rico and may spread elsewhere in the Caribbean. This means that the diagnosis of dengue needs to be considered in people with a febrile illness who have recently been in the Caribbean. Since *Aedes aegypti*, the mosquito vector is present in Louisiana, it is theoretically possible for secondary transmission to occur, although this has not yet happened.

A description of one of the outbreaks will illustrate features common to all. In June, 1977 a parent reported that a child in a New Orleans day care center and several family members of another child attending the same day care center had hepatitis. When the Epidemiology Unit inquired, the owner of this licensed private day care center denied knowing of any additional cases. The day care center had an enrollment of 38 children of working parents from 37 families, ranging in age from 18 months to seven years. A sanitary inspection of the center did not reveal any severe violations. Only one of the children was not toilet trained. One meal per day was served at the center, and the employee who served the meal also had very close contact with the children, a common practice at many day care centers. Altogether, there were four full-time workers at the center in addition to the owner.

The Epidemiology Unit visited the day care center and talked to an adult from each family. In all, nine cases, each one clinically evident and diagnosed by a physician, had occurred between early May, 1977, and the time of the investigation in late June, 1977. Two cases were children in the day care center, one of whom was hospitalized; the other seven (from five families) comprised six parents and one sibling. In two of the families both parents had hepatitis. Five cases were hospitalized. The rate for cases among household contacts was 7.1% (7/98) with 16.2% (6/37) of households affected. No employees had been ill, though in other outbreaks they have been a high risk group.

The mode of introduction of hepatitis into the day care center could not be determined for certain, but an interesting possibility is that it was imported from a different day care center. The first two cases which occurred, almost one month before any other cases, were in a mother and father whose child had left another day care center in early March. Unknown to these parents, a number of other parents from this same day care center were developing hepatitis at the same time (April and May). This day care center, number 4 in Table I, had also been investigated by the Epidemiology Unit. A likely course of events is that the child who transferred was incubating hepatitis when he left the first day care center in early March and became contagious in April, resulting in infections in his parents and in the other children in the day care center beginning in May. The infections in the children went unnoticed except for one, but resulted in the infections in family members observed in June. A similar pattern of a child transferring from a day care center with a hepatitis problem to a new one, with cases occurring in family members of children in the new day care center approximately two incubation periods later, was observed in one other outbreak. The possibility of the

outbreak arising by importation from another day care center was not systematically investigated for most of the outbreaks, and thus may have occurred more commonly than we appreciate at present.

In the seven outbreaks investigated during the past year, the attack rates for involved groups - children, household contacts, households themselves - have varied little (Table I). The attack rate of clinical hepatitis A diagnosed by a physician in day care center children ranged from 1.3% to 5.3% for the five outbreaks in which this rate could be calculated. In those five centers, attack rate in household contacts ranged from 3.4% to 9.8%, while from 11.1% to 18.2% of all households contacted had at least one case. Employee attack rate ranged from 0 to 50%, and overall, was approximately 5-10% considering all employees in affected day care centers together. The outbreaks tend to occur over a number of weeks, ranging from 8 to 32 with a mean of 17.1. No pattern is yet apparent in terms of what type of day care center is most likely to be affected.

The magnitude of the overall problem is uncertain at this time. The Epidemiology Unit became interested during the summer of 1976, learned of the first outbreak in September, 1976, and by July, 1977 had investigated six additional outbreaks, all in the New Orleans metropolitan area, each one involving at least three separate families (Table I). With the inherent difficulties in detecting the outbreaks, there may well have been others which went undiscovered. These seven outbreaks involved a total of 95 cases of hepatitis A between August, 1976 and July, 1977, all in Orleans and Jefferson parishes. Twelve of these were in children in day care centers, six were in day care center employees, and 77 were in contacts of the children. Fifty-seven of the 77 contacts (74.0%) lived in the same household as the child in the day care center. Whether this was a typical year's experience is completely unknown as of now.

What are the dynamics of a day care center hepatitis outbreak? We believe that when the hepatitis A virus is introduced into the day care center, probably in most cases by a worker or a child, it may spread rapidly among the children who, because of their young age, are highly susceptible.<sup>3,4</sup> Only a few or none at all will show signs of clinical illness. The intimate contact which occurs in the day care center environment as well as the poor hygiene of toddlers facilitates rapid and widespread dispersal of the virus. Diaper changing by employees who have intimate contact with many children also is a potential means of spread, especially since their duties usually include feeding or assistance with eating. Food preparation and serving by employees who have been handling the children may further amplify the outbreak.

It seems likely that the outbreak among the

children may affect nearly all of the children simultaneously, in which case the outbreak will be short lived, or may go through several generations in the day care center, especially if the pool of susceptibles is expanded by the entry of new children into the day care center, in which case the outbreak will continue for many weeks. The extent of the outbreak is not appreciated because of the mildness of the illness in the day care center age group. The anicteric to icteric ratio in young children has been estimated to be as high as 30:1.<sup>5</sup> The final step is the transmission by day care center children to older family members, who are more likely to develop symptomatic and clinically evident hepatitis.<sup>3</sup> The impact on the community may be magnified by further transmission within and beyond families.

Laboratory evidence consistent with this scenario is available from an outbreak in a day care center in North Carolina<sup>2</sup> in which a worker and four parents developed hepatitis within a two week period. These five had nothing in common other than contact with the same day care center. No cases were evident among the children in the center, but three weeks after the first diagnosed case, 25 of 27 children in the day care center had abnormal values for SGOT, illustrating the potential for wide dissemination of the hepatitis A virus within a day care center.

A most important public health aspect of these day care center outbreaks is that they are difficult to detect for a variety of reasons. Although hepatitis is a reportable disease, it is chronically under-reported.<sup>6,7</sup> Only 37 of the 95 cases in the seven outbreaks described here were reported by physicians to the health department. Even when cases are reported, the physician may not be aware or may not consider it important that his adult hepatitis patient has a child in a day care center when there is no obvious evidence that there has been a hepatitis problem in the day care center. Day care center operators frequently do not notify parents or the health department when they learn of a case in a child, a worker, or a family member for fear that the health department will close the center or that parents may withdraw their children. Parents frequently do not notify the day care center if a family member has hepatitis, possibly for fear that the day care center will not permit the child to attend. We have also found that in all day care centers we have investigated, parents do not socialize with other parents outside of the day care center, so that even if there are hepatitis cases in a number of families, the affected families may not be aware of cases occurring in other day care center families. Neither families nor the day care center staff may be aware that ten to twenty percent of day care center families are affected by hepatitis over a several month period. The outbreak may even be invisible to the day care center operator, the parents, community physicians, and the health department

simultaneously.

Our approach to uncovering day care center outbreaks is to query every reported case of hepatitis A carefully about contact with children in day care centers. When there is contact, we inquire at the day care center about the presence of any other cases in children, workers, or parents. If there is a suggestion that other cases have occurred recently, we have found that the only effective technique for discovering whether there is a problem at the day care center, short of drawing blood on all the children, is to survey all families for cases of physician-diagnosed hepatitis. If the case rate far exceeds that in the general population, i.e. 10% of household contacts of day care center children versus roughly 20/100,000 in the general population, and the cases do not have other obvious explanations, then the day care center is suspect, even if no cases have been diagnosed among the children. If we learn of a case in a child or a worker, we feel there is a high probability of an outbreak either having already occurred or being in progress, and we initiate a survey of parents to define its extent.

The question of how best to manage an affected day care center is unanswered. There are several considerations. Is gamma globulin useful, and if so, who should get it? What other measures are important? How many cases in families members implicate the day care center as the source when no cases have been diagnosed in day care center children? The Epidemiology Unit's current policy is to make a careful individual evaluation and then recommend who among children, employees, and household contacts needs gamma globulin. Day care centers are also advised not to admit any new children until six weeks have elapsed from the last case. The use of hepatitis A antibody and transaminase testing for identifying susceptibles and asymptomatic cases to allow better targeting of control measures is being explored.

#### REFERENCES:

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- 5 De Ritis, F., et al: Anicteric Virus Hepatitis in a Closed Environment as Shown by Serum Transaminase Activity. *Bulletin of the W.H.O.* 20: 589-602, 1959.
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## OUTBREAKS OF HEPATITIS A IN DAY CARE CENTERS

| DCC ID NO. | TYPE | CHILDREN ENROLLED | FAMILIES CONTACTED / ENROLLED | CASES AND RATES OF HEPATITIS A |      |                    |                 |                   |      |                        |       |           |       | MODE OF DISCOVERY | WEEKS FROM FIRST CASE TO LAST | MODE OF INTRODUCTION        |                     |      |
|------------|------|-------------------|-------------------------------|--------------------------------|------|--------------------|-----------------|-------------------|------|------------------------|-------|-----------|-------|-------------------|-------------------------------|-----------------------------|---------------------|------|
|            |      |                   |                               | TOTAL CASES                    |      | CHILDREN IN CENTER |                 | HOUSEHOLD MEMBERS |      | NON-HOUSEHOLD CONTACTS |       | EMPLOYEES |       |                   |                               |                             | HOUSEHOLDS AFFECTED |      |
|            |      |                   |                               | NO.                            | RATE | NO.                | RATE            | NO.               | RATE | NO.                    | RATE  | NO.       | RATE  |                   |                               |                             | NO.                 | RATE |
| 1          | Priv | 44                | 33/34                         | 14                             | 2    | 4.5%               | 11              | 9.5%              | 1    | 0                      | 0     | 6         | 18.2% | 21                | ?                             | ?                           |                     |      |
| 2          | Priv | 39                | 36/36                         | 7                              | 1    | 2.6%               | 4               | 4.7%              | 0    | 2                      | 50.0% | 4         | 11.1% | 10                | ?                             | ?                           |                     |      |
| 3          | Priv | 38                | 37/37                         | 9                              | 2    | 5.3%               | 7               | 7.1%              | 0    | 0                      | 0     | 6         | 16.2% | 8                 | (2) child trans from DCC #4   |                             |                     |      |
| 4          | Priv | 80                | 63/64                         | 27                             | 1    | 1.3%               | 15              | 9.8%              | 10   | 1                      | -     | 9         | 14.3% | 23                | ?                             | ?                           |                     |      |
| 5          | Priv | 32                | 27/29                         | 4                              | 1    | 3.1%               | 3               | 3.4%              | 0    | 0                      | 0     | 3         | 11.5% | 16                | ?                             | ?                           |                     |      |
| 6          | Priv | > 50 <sup>2</sup> | 34/43                         | 31                             | 4    | -                  | 15              | -                 | 9    | 3                      | -     | 16        | -     | 32                | ?                             | Worker (?)                  |                     |      |
| 7          | Corp | 111               | 49/98                         | 6                              | 1    | - <sup>3</sup>     | 5               | -                 | 0    | 0                      | 0     | 4         | -     | 10                | ?                             | (?) child trans from DCC #2 |                     |      |
| TOTALS     |      |                   |                               | 95 <sup>4</sup>                | 12   |                    | 57 <sup>4</sup> |                   | 10   | 6                      |       | 48        |       |                   |                               |                             |                     |      |

\* % of children enrolled with clinical hepatitis - physician diagnosed.  
 \*\* % of household members in contacted households with clinical hepatitis - physician diagnosed.  
 \*\*\* % of all employees with clinical hepatitis - physician diagnosed.  
 \*\*\*\* % of all households contacted with at least one case of clinical hepatitis - physician diagnosed.

<sup>1</sup> Total number of employees unknown.  
<sup>2</sup> Poor cooperation prevented learning full enrollment.  
<sup>3</sup> Survey too incomplete to allow calculation of rates.  
<sup>4</sup> Corrected for three people involved in two outbreaks.

# SELECTED REPORTABLE DISEASES

(By Place of Residence)

| STATE AND<br>PARISH TOTALS            | ASEPTIC<br>MENINGITIS | DIPHTHERIA | ENCEPHALITIS | ENCEPHALITIS,<br>POST INFECTIONOUS | HEPATITIS A AND<br>UNSPECIFIED | HEPATITIS B | TUBERCULOSIS,<br>PULMONARY | MENINGOCOCCAL<br>INFECTIONS | PERTUSSIS | RABIES IN ANIMALS | RUBELLA* | SEVERE<br>UNDERNUTRITION | SHIGELLOSIS | TYPHOID FEVER | OTHER SALMONELLOSIS | TETANUS | MEASLES | GONORRHEA | SYPHILIS, PRIMARY<br>AND SECONDARY |
|---------------------------------------|-----------------------|------------|--------------|------------------------------------|--------------------------------|-------------|----------------------------|-----------------------------|-----------|-------------------|----------|--------------------------|-------------|---------------|---------------------|---------|---------|-----------|------------------------------------|
| Reported Morbidity<br>September, 1977 |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         |           |                                    |
| TOTAL TO DATE 1976                    | 52                    | 0          | 22           | 4                                  | 376                            | 132         | 398                        | 35                          | 5         | 6                 | 87       | 7                        | 72          | 2             | 86                  | 2       | 199     | 14387     | 447                                |
| TOTAL TO DATE 1977                    | 15                    | 0          | 8            | 0                                  | 478                            | 116         | 434                        | 128                         | 6         | 21                | 27       | 4                        | 103         | 1             | 107                 | 1       | 74      | 14128     | 540                                |
| TOTAL THIS MONTH                      | 2                     | 0          | 0            | 0                                  | 69                             | 15          | 45                         | 45                          | 1         | 3                 | 0        | 0                        | 34          | 1             | 25                  | 0       | 0       | 2124      | 70                                 |
| ACADIA                                |                       |            |              |                                    |                                |             | 1                          | 1                           |           |                   |          |                          |             |               |                     |         |         | 16        | 1                                  |
| ALLEN                                 |                       |            |              |                                    |                                |             | 1                          |                             |           |                   |          |                          |             |               |                     |         |         | 3         |                                    |
| ASCENSION                             |                       |            |              |                                    | 6                              |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 9         |                                    |
| ASSUMPTION                            |                       |            |              |                                    |                                | 1           | 2                          | 1                           |           |                   |          |                          |             |               |                     |         |         | 6         |                                    |
| AVOUELLES                             |                       |            |              |                                    | 1                              |             | 1                          |                             |           |                   |          |                          |             |               |                     |         |         | 5         |                                    |
| BEAUREGARD                            |                       |            |              |                                    |                                | 1           |                            | 1                           |           |                   |          |                          | 3           |               | 1                   |         |         | 2         |                                    |
| BIENVILLE                             |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         |           |                                    |
| BOSSIER                               |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          | 4           |               | 1                   |         |         | 26        | 1                                  |
| CADDO                                 |                       |            |              |                                    | 4                              | 2           | 6                          | 1                           |           | 2                 |          |                          | 9           |               |                     |         |         | 212       | 5                                  |
| CALCASIEU                             |                       |            |              |                                    | 2                              | 2           | 1                          |                             |           |                   |          |                          |             |               |                     |         |         | 103       |                                    |
| CALDWELL                              |                       |            |              |                                    |                                |             | 1                          |                             |           |                   |          |                          |             |               |                     |         |         |           |                                    |
| CAMERON                               |                       |            |              |                                    | 2                              |             |                            |                             |           |                   |          |                          |             |               | 1                   |         |         |           |                                    |
| CATAHOULA                             |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         |           |                                    |
| CLAIBORNE                             |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 3         |                                    |
| CONCORDIA                             |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 11        |                                    |
| DESOTO                                |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 6         |                                    |
| EAST BATON ROUGE                      |                       |            |              |                                    | 4                              |             | 1                          | 5                           |           |                   |          |                          | 1           |               |                     |         |         | 146       | 12                                 |
| EAST CARROLL                          |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 4         |                                    |
| EAST FELICIANA                        |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 1         | 2                                  |
| EVANGELINE                            |                       |            |              |                                    | 1                              |             |                            |                             |           |                   |          |                          |             |               |                     |         |         |           |                                    |
| FRANKLIN                              |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 3         |                                    |
| GRANT                                 |                       |            |              |                                    | 1                              |             | 1                          |                             |           |                   |          |                          |             |               |                     |         |         | 9         |                                    |
| IBERIA                                |                       |            |              |                                    | 1                              |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 20        |                                    |
| IBERVILLE                             |                       |            |              |                                    |                                | 1           |                            |                             |           |                   |          |                          |             |               |                     |         |         | 20        | 2                                  |
| JACKSON                               |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         |           |                                    |
| JEFFERSON                             |                       |            |              |                                    | 10                             |             | 1                          | 6                           |           |                   |          |                          |             | 1             | 2                   |         |         | 60        | 4                                  |
| JEFFERSON DAVIS                       |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 19        |                                    |
| LAFAYETTE                             |                       |            |              |                                    |                                |             |                            | 1                           |           |                   |          |                          |             |               |                     |         |         | 60        | 6                                  |
| LAFOURCHE                             |                       |            |              |                                    | 1                              | 3           | 1                          | 1                           |           |                   |          |                          |             |               |                     |         |         | 17        |                                    |
| LASALLE                               |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         |           |                                    |
| LINCOLN                               |                       |            |              |                                    | 1                              |             | 2                          |                             |           |                   |          |                          |             |               |                     |         |         | 10        |                                    |
| LIVINGSTON                            |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 3         | 1                                  |
| MADISON                               |                       |            |              |                                    |                                |             | 2                          |                             |           |                   |          |                          |             |               |                     |         |         | 8         | 2                                  |
| MOREHOUSE                             |                       |            |              |                                    |                                |             | 1                          | 1                           |           |                   |          |                          |             |               |                     |         |         | 29        |                                    |
| NATCHITOCHE                           |                       |            |              |                                    | 1                              |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 52        |                                    |
| ORLEANS                               | 1                     |            |              |                                    | 5                              | 1           | 10                         | 11                          |           |                   |          |                          | 10          |               | 10                  |         |         | 604       | 12                                 |
| OUACHITA                              |                       |            |              |                                    | 4                              |             | 3                          |                             | 1         | 1                 |          |                          |             |               |                     |         |         | 108       | 2                                  |
| PLAQUEMINES                           |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 1         | 2                                  |
| POINTE COUPEE                         |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 1         |                                    |
| RAPIDES                               |                       |            |              |                                    | 4                              |             | 3                          | 2                           |           |                   |          |                          |             |               | 2                   |         |         | 205       | 5                                  |
| RED RIVER                             |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 9         |                                    |
| RICHLAND                              |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 2         | 2                                  |
| SABINE                                |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          | 6           |               |                     |         |         | 2         |                                    |
| ST. BERNARD                           |                       |            |              |                                    | 2                              | 1           |                            | 1                           |           |                   |          |                          |             |               |                     |         |         | 6         |                                    |
| ST. CHARLES                           |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 7         | 2                                  |
| ST. HELENA                            |                       |            |              |                                    | 1                              |             |                            | 2                           |           |                   |          |                          |             |               |                     |         |         | 1         |                                    |
| ST. JAMES                             |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 5         |                                    |
| ST. JOHN                              |                       |            |              |                                    |                                |             |                            | 2                           |           |                   |          |                          |             |               |                     |         |         |           | 1                                  |
| ST. LANDRY                            |                       |            |              |                                    | 6                              | 1           |                            | 3                           |           |                   |          |                          |             |               | 1                   |         |         | 3         |                                    |
| ST. MARTIN                            |                       |            |              |                                    | 1                              |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 5         |                                    |
| ST. MARY                              | 1                     |            |              |                                    | 1                              |             | 1                          | 4                           |           |                   |          |                          |             |               |                     |         |         | 6         |                                    |
| ST. TAMMANY                           |                       |            |              |                                    | 1                              |             |                            | 1                           |           |                   |          |                          |             |               |                     |         |         | 19        | 2                                  |
| TANGIPAHOA                            |                       |            |              |                                    | 3                              |             | 2                          |                             |           |                   |          |                          |             |               |                     |         |         | 40        |                                    |
| TENSAS                                |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 1         |                                    |
| TERREBONNE                            |                       |            |              |                                    | 4                              | 1           | 2                          | 1                           |           |                   |          |                          |             |               | 1                   |         |         | 13        |                                    |
| UNION                                 |                       |            |              |                                    |                                |             | 1                          |                             |           |                   |          |                          |             |               |                     |         |         | 16        |                                    |
| VERMILION                             |                       |            |              |                                    |                                |             | 1                          |                             |           |                   |          |                          |             |               | 1                   |         |         |           |                                    |
| VERNON                                |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          | 1           |               | 2                   |         |         | 125       |                                    |
| WASHINGTON                            |                       |            |              |                                    | 1                              | 1           |                            |                             |           |                   |          |                          |             |               | 1                   |         |         | 13        |                                    |
| WEBSTER                               |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 12        |                                    |
| WEST BATON ROUGE                      |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 13        | 5                                  |
| WEST CARROLL                          |                       |            |              |                                    | 1                              |             |                            |                             |           |                   |          |                          |             |               | 1                   |         |         | 3         |                                    |
| WEST FELICIANA                        |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 35        |                                    |
| WINN                                  |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 6         | 1                                  |
| OUT OF STATE                          |                       |            |              |                                    |                                |             |                            |                             |           |                   |          |                          |             |               |                     |         |         | 2         |                                    |

\* Includes Rubella, Congenital Syndrome

From January 1 through September 30, 1977, the following cases were also reported: 1 - Brucellosis; 4 - Leptospirosis; 2 - Malaria (Contracted outside the U.S.A.); 7 - Rocky Mountain Spotted Fever.