# LOUISIANA MORBIDITY REPORT

## EPIDEMIOLOGY
## PUBLIC HEALTH STATISTICS

March/April 1989





DAVID L. RAMSEY
SECRETARY
(504) 342-6711

DEPARTMENT OF HEALTH AND HOSPITALS
OFFICE OF PUBLIC HEALTH
DIVISION OF RECORDS AND STATISTICS
P.O. BOX 60630
NEW ORLEANS, LOUISIANA 70160


# Pseudo-Outbreak Of Nosocomial Salmonellosis, Louisiana


**Bernard J. Moriniere, M.D., M.P.H. Epidemiology Section**


On February 22, 1989, the Epidemiology Section was notified that a local hospital in South Louisiana reported nine cases of non-fecal isolates of Salmonella typhimurium (S.T.) between October, 1988 and February, 1989, which raised questions about possible nosocomial infection or specimen contamination. Six were from endotracheal tubes from neonates, two were from respiratory specimens from pediatric patients, and one was from the internal tip of a plasmapheresis catheter, removed from a 30 year-old patient with signs of sepsis.

Hospital A is a 300-bed, privately owned hospital offering general medical services, including emergency care, neo-natal, pediatric and adult intensive care, and surgical services, including obstetrics and neurosurgery.

The second floor is dedicated to Maternal and Child Care Department, with a Pediatric Ward, a Maternity, a Labor and Delivery unit (LDU) with one operating room and two delivery rooms, a Neonatal Intensive Care Unit (NICU) of 10-bed capacity, located next to the LDU, and a Pediatric ICU.

The NICU is staffed by a total of 13 nurses, with addition of agency nurses on occasions. The nurses work 12-hour shifts, with a usual staff of two on one shift. The average number of NICU patients is estimated to be 2 to 4, with no more than one or two incubated patients at the same time.

The bacteriology laboratory performs identification and agglutination grouping of Salmonella isolates, as well as antibiotic sensitivity testing. Isolates are referred to the State Laboratory for confirmation and serotyping.

**DESCRIPTION OF THE OUTBREAK**

The first episode occurred October 19, 1988, when two isolates of Salmonella group B were reported from endotracheal-tube (ETT) cultures from two neonates in the NICU.

Case-patient 1 was a premature baby born by caesarean section

(CS) on 10/16/88, at Hospital A, with a history of premature rupture of membranes at 28 weeks of gestation. There was no maternal history of recent gastro-intestinal illness. The first routine ETT culture, on 10/17/87, grew Salmonella B. The patient expired 10/19/88 due to multiorgan failure and without evidence of S.T. infection. A repeat ETT-culture and a stool culture were negative, plus a stool culture from the mother was negative.

Case-patient 2 was a premature baby, born by CS on 09/23/88 at Hospital A. Nine routine ETT cultures had been negative until one grew Salmonella B on 10/18/88, without signs of S.T. infection. A stool culture and 9 subsequent ETT-cultures were negative.

Seven additional, non-case neonates had been present in the NICU since 10/15/88. None of them had gastro-intestinal symptoms of S.T. infection. Stool specimens were obtained from all, and none grew S.T. Cohorting and aseptic precautions were enforced. All NICU nurses and respiratory therapist staff were assessed for recent history of diarrhea, which they all denied.

Case-patient 3 was a 2-month-old infant admitted 12/03/88 on the pediatric ward for upper-respiratory-tract infection, whose nasal washing specimen grew S.T. on 12/04/88.

Case-patient 4 was a 30-year-old male with a history of brain surgery for pineal tumor, resulting in panhypopituitarism and steroid substitutive treatment. He was admitted on the neurology floor on 12/07/88 for febrile upper respiratory tract infection and suspected Guillain-Barre syndrome, for which he underwent plasmapheresis on 12/08/88. The I.V. plasmapheresis catheter was removed because of signs of sepsis on 12/15/88 and the internal tip grew Staphylococcus sp. and S.T.

Case-patients 5, 6, 7, and 8 were neonates admitted to the same NICU as case-patients 1 and 2. They each had one S.T.-positive ETT culture on 12/29/88, 01/13/89, 01/14/89 and 02/07/89, respectively. All ETT cultures taken before (n = 6) or after the case-cultures (n = 5) were negative, as were cultures of specimens from other sites. All four patients were under antibiotherapy (ampicillin + gentamycin) for other reasons. None had signs of S.T. infection and all were subsequently discharged in healthy condition from the NICU.

Case-patient 9 was a severely retarded and asthmatic 8-year-old girl with permanent tracheostomy, admitted on the pediatric ward 02/12/89 for hemoptysis and suspected pneumonia. The tracheostomy aspirate collected on admission grew S.T. She was treated with ceftriaxone and ticarcillin.

Case-patient 10 was a 64-year-old male with diabetes and chronic renal failure, who had been admitted on 02/27/89 to another hospital for diarrhea and dehydration. His stool culture was negative. He was transferred to Hospital A on 03/02/89, for hemodialysis through I.V. supraclavicular line. On 03/03/89, arterial blood gases were drawn from the right wrist. On 03/07/89, fever and swelling

of the right wrist joint developed. Aspiration of the joint grew Staphylococcus sp. Treatment with cefotaxime and vancomycin was instituted, with good response. On 03/10/89, swelling of the left wrist joint developed, and a joint aspirate grew S.T. Symptoms eventually resolved without change in therapy.

Case-patients 1 through 10 all had been under care by respiratory therapists from a single respiratory therapy department.

Case-patient 11 was a 34-year old woman admitted to the neurology floor on 03/09/89 with a diagnosis of pseudotumor cerebri. On 03/13/89 she underwent surgery for placement of a lumbo-peritoneal shunt, under chemoprophylaxis with oxacillin. CSF at time of initial surgery was clear. On 03/19/89, a leak of CSF, fever and a high white blood cell count prompted a second surgery procedure for revision of the shunt. Culture of the peritoneal tip of the catheter grew Staphylococcus sp. and S.T. The Gram stain before culture showed many white cells and rare Gram negative rods. She was treated with cefazolin until 03/24/89, then with vancomycin and tobramycin for suspected Staphylococcus sp. infection. The shunt was removed on 03/24/89, for persistence of leaking and suspected meningeal infection. The CSF showed many white cells, high protein and low glucose, rare Gram negative rods, but cultures were negative.

The investigation took place after case-patient 9 had been reported. Case-patients 10 and 11 were reported during the course of the investigation.

**METHODS**

Epidemiologic Investigation:

Case-finding. A case was defined as the occurrence of a culture positive isolate for Salmonella typhimurium from any clinical specimen between 10/01/88 and 03/20/89. Cases were identified from the list maintained at the bacteriology laboratory, which includes isolates of Salmonella group B, referred to the State Laboratory and identified as Salmonella typhimurium. Culture results for all clinical specimens could be verified easily through a computerized database.

Review of background surveillance data included the following: records of the laboratory and infection control section since 01/01/87; records of the parish health unit; records of the State Laboratory and records of the Epidemiology Section for Salmonella isolates referred and/or reported since 01/01/87.

NICU-based retrospective cohort study. To investigate NICU-nurses' shifts, time of specimen collection, contacts with individual nurses and contacts with respiratory therapists, we conducted a retrospective cohort study of all ETT cultures from NICU patients between 10/01/88 and 02/28/89. Dates and results of all NICU-ETT cultures were retrieved from the computerized database. Medical records were reviewed to assess dates and results of each ETT culture, shift and time of specimen collection, when available, and to identify the names of the nurse(s) and respiratory therapist(s) involved in the care of the patient at the time of specimen collection.

Laboratory-based case-control study. To investigate laboratory technicians' shifts, time of specimen processing and contacts with individual laboratory technicians, we conducted a laboratory based, unmatched case-control study of all respiratory and catheter specimens between 10/01/88 and 03/20/89. A case-specimen was defined as any nonfecal isolate of S.T. Three controls per case were selected through simple random sampling from the laboratory log book of all specimens processed by the bacteriology laboratory during the same time period, excluding specimens other than respiratory or catheters. The original laboratory slips were assessed for time of specimen processing and initials of technician.

Environmental Investigation:

NICU. To look for possible breakdown in aseptic procedures and for a possible reservoir, we reviewed specimen collection and patient management procedures, respiratory equipment maintenance procedures, work schedules of nurses and respiratory therapists.

All NICU-nurses, pediatricians and respiratory therapists visiting the NICU were asked to complete a questionnaire on history of diarrhea in self and household contacts, and to submit two stool specimens, 24 hours apart.

Laboratory. To look for possible sources of contamination, we reviewed specimen processing and culture set-up practices, and work schedules of laboratory technicians.

Laboratory Investigation:

Salmonella identification, grouping and drug sensitivity testing were performed at Hospital A bacteriology laboratory using standard procedures. Isolates of Salmonella group B were referred to the State Laboratory in New Orleans for confirmation and serotyping.

Isolates of S.T. which were available from the State Laboratory were referred to C.D.C. for confirmatory drug sensitivity testing and plasmid profile analysis.

**RESULTS**

Epidemiologic Investigation:

Case finding. A total of 13 isolates of Salmonella B had been identified at Hospital A between 10/17/88 and 03/19/89, and identified as S.T. by the State Laboratory. Two were from stool specimens: one from a 36 year-old woman admitted 12/14/88 for diarrhea, whose isolate had a distinct drug sensitivity pattern from that of the outbreak-related strain; one from a 1-year-old boy admitted 01/26/89 for diarrhea, vomiting and febrile seizure, which was of the same drug sensitivity pattern and plasmid profile as those of the outbreak-related strain. No relation was found between this patient and any of the case-patients or hospital staff members. Because these two fecal isolates had been recovered from patients with evidence of community-acquired diarrhea, they were excluded from subsequent analysis of the suspected nosocomial outbreak, restricted to the 11 non-fecal isolates.

The 11 case-cultures by date of onset are shown on Figure 1. Six were from NICU patients, the other 5 from 5 different wards. Age of case-patients ranged from 1 day to 64 years (median: 1 month).

Review of surveillance data. The last isolate of S.T. from Hospital A before the outbreak had been reported in April 1987, and was not available for testing. For the Parish as a whole, a total of 27 cases of salmonellosis were reported during the outbreak period, including 5 cases of S.T. infection (not including the non-fecal isolates), as compared with 22 cases of salmonellosis for the same period in 1987/88, thus showing no evidence of community-based outbreak of salmonellosis.

NICU-based retrospective cohort study. Routine ETT cultures are obtained every three days on any NICU patient incubated for two or more days. Between 10/01/88 and 02/28/89, a total of 42 infants had been admitted to the NICU, and 18 (43%) had been incubated for two or more days, resulting in 57 ETT cultures which comprised the cohort for this study. The usual work schedules of NICU nurses are from 7 a.m. to 7 p.m., with occasional variations. Figure 2 shows the distribution by time of specimen collection of 32 specimens for which this information was available. Case-specimens had been collected in both day and night shifts. When compared with specimens collected during day shift, specimens collected during night shift had a 4 times greater risk of resulting in a S.T.-positive culture (4 [22%] of 18 versus 2 [5%] of 39, Relative Risk [R.R.]: 4.3, 95% Confidence Limits [C.L.] 0.9.21.5) (Table 1) Nurse-specific attack rates and relative risks are shown on Table 2. Respiratory-therapist-specific attack rates and relative risks are shown on Table 3. None could account for more than 3 positive cultures.

Laboratory-based case control study. 11 cultures met the case definition. 33 control-cultures were selected. One was excluded because the information on processing time was missing from the laboratory records. Figure 3 shows the distribution of cases and controls by time of processing. The day shift for bacteriology personnel is from 7 a.m. to 3 p.m. Evening shift is from 3 p.m. to 11 p.m. Night shift is from 11 p.m. to 7 a.m. 11 (100%) of 11 case-cultures had been processed during evening or night shifts, as opposed to 19 (59%) of 32 control-cultures (Odds Ratio undefined, Exact Lower 95% Confidence Limit 1.4) (Table 4).

Environmental investigation:

NICU Review of NICU and respiratory therapy department operations and equipment failed to identify any potential reservoir or likely mode of contamination. Of 13 NICU nurses, 2 pediatricians and 14 respiratory therapists, all nurses and pediatricians and 10 respiratory therapists completed the questionnaire and did not report any history of diarrhea. Paired stool specimens from these 25 staff members were negative.

Laboratory. Initial investigation of laboratory procedures did not reveal any potential sources or modes of specimen contamination, and indicated that 8 different

laboratory staff members had been involved in setting-up the case-cultures, which did not support the hypothesis of a carrier-laboratory technician as a source of contamination.
Epidemiologic evidence that all case-cultures were from specimens processed during evening or night laboratory shifts prompted further investigation of laboratory procedures. The bacteriology staff operates only during day shift. During evening and night, staff from the biochemistry laboratory, across the hall, come to the bacteriology section to process cultures on an as-needed basis, when specimens are brought-in. Questioning of three non-day shift laboratory staff indicated that they had been using saline or distilled water from dropper bottles, labeled "sterile" but commonly used for non-sterile procedures such as staining slides, to flush specimens out of catheter-tips prior to setting-up the cultures, instead of the unit-dose, sterile, breakable glass vials that were supposed to be used for that purpose. Beside the misleading label, a reason for using the dropper bottles was fear of cutting their hands when breaking the glass vials. (The head of the bacteriology laboratory reported cutting her own hands four times over a one-year period, and the sales-person of one bacteriology equipment company cut her own hands while doing a demonstration using this product.)

Laboratory Investigation:

Three of the 11 case-specimens exhibited Gram-negative rods on the Gram stain, prior to culture.

The 11 non-fecal S.T. isolates had an identical drug sensitivity pattern (intermediate sensitivity to streptomycin, sensitivity to all other antibiotics tested) and an identical plasmid profile (one 62-65 megadalton plasmid).

Of the two isolates recovered from fecal specimens during the outbreak period, one had a different drug sensitivity pattern from that of the outbreak related strain (intermediate sensitivity to tetracycline) and a different plasmid profile. The other fecal isolate was from a patient with evidence of community acquired diarrhea, and was isolated during the course of the outbreak, therefore could not be considered as a possible source of contamination for the early cases.

Of 50 paired stool specimens from 25 NICU staff members and respiratory therapists, none grew Salmonella sp.

Of 7 dropper-bottles cultures, one grew S.T. with the same drug sensitivity pattern and plasmid profile as the outbreak-related strain.

**DISCUSSION**

This pseudo-outbreak, due to a series of false-positive culture results caused by repeated laboratory errors, mimicked a 5-month outbreak of nosocomial salmonellosis. The majority of the patients involved had no signs consistent with S.T. infection, and most cultures were systematic cultures of ET tubes and catheters, rather than clinical specimens sent in for diagnostic of a presumed infection. However, this situation caused a lot of disruption in the NICU operations, affected patient management and treatment

decisions in at least two adult and one pediatric patients, and required an investigation involving a considerable amount of time and infection control, epidemiologic and laboratory resources.

Factors that contributed to the protracted laboratory error include improper training and supervision of laboratory staff performing procedures which were not part of their routine responsibility; misleading "sterile" labeling of dropper-bottles not intended for use in sterile procedures; expected use by laboratory workers of a product perceived as dangerous; failure to suspect and identify the cause of the problem after the early cases.

The source of contamination of the dropper-bottle is unknown. The most likely mode of contamination is through the tip of the dropper being contaminated while coming in contact with a colony while setting-up a slide for staining.

No culture positive specimen for S.T. has been found in the laboratory log books between April 1987 and October 17, 1988, which could be suspected of being the source of contamination. Based on anecdotal information from the laboratory staff, it is highly unlikely that the bottle would have been in use and not replaced since 1987. One hypothesis was that the bottle would have become contaminated when processing specimens sent-in for the quality-assurance program. The laboratory records do not indicate that any S.T. specimen has been processed through this program in 1988. Another hypothesis was that one of the two first case-cultures had been real and was the source of contamination. However, this would make it difficult to explain how the other specimen got contaminated the same day, and lack of clinical evidence of S.T. infection, negative repeat cultures and negative stool cultures from the mother do not support this hypothesis.

**CONCLUSIONS**

Over a 5-month period, 11 non-fecal isolates of Salmonella typhimurium were recovered from respiratory specimens and catheter-tips cultures from neonates, pediatric and adult patients at a local hospital in Louisiana. All the isolates had an identical drug sensitivity pattern and the same plasmid profile. None of the case-patients had confirmed S.T. infection. Epidemiologic evidence indicated that cultures processed by evening or night laboratory shifts had an infinitely greater risk of growing S.T. than did cultures processed by day shift laboratory personnel. A dropper-bottle of saline solution, which had been mistakenly used instead of sterile vials for processing specimens, was found to have been contaminated by the same strain of S.T. The origin of the contamination is unknown.

**RECOMMENDATIONS**

Our recommendations included the following:

To inform clinical personnel in NICU and respiratory therapy department, once suspected on non-hygienic practices, of the actual source of the contamination.

To provide in-service training to

laboratory staff on proper sterile procedures for specimen and culture processing.

To invite clinical staff to submit systematic specimens during day-time operations of the bacteriology laboratory staff, as far as possible.

To limit the number of dropper bottles, properly relabeled, for use by the only day-shift bacteriology staff for non-sterile procedures.

To consider alternatives to the glass, breakable, unit-dose vials of sterile saline currently in use for processing specimens.

**TABLE 1**

Effect of shift of specimen collection on NICU-ETT cultures results.

| | Total | Positive | % | R.R. | 95% CL |
|---|---|---|---|---|---|
| Shift: | | | | | |
| Night | 18 | 4 | 22 | 4.3 | 0.9, 21.5 |
| Day | 39 | 2 | 5 | 1.0 | (reference) |
| | 57 | 6 | | | |

**TABLE 2**

Effect of contacts with nurses* on NICU-ETT cultures results.

| | Contact | | No Contact | | | |
|---|---|---|---|---|---|---|
| | Total | % Positive | Total | % Positive | R.R. | 95% CL |
| Nurse: | | | | | | |
| A | 2 | 50 | 55 | 9 | 5.5 | 0.1, 80 |
| B | 3 | 33 | 54 | 5 | 3.6 | 0.6, 30 |
| C | 5 | 20 | 52 | 10 | 2.1 | 0.3, 15 |
| D | 12 | 17 | 45 | 9 | 1.9 | 0.4, 9 |

* Table restricted to nurses for whom R.R.>1.

**TABLE 3**

Effect of contacts with respiratory therapists* on NICU-ETT cultures results.

| | Contact | | No Contact | | | |
|---|---|---|---|---|---|---|
| | total | % positive | total | % positive | R.R. | 95% CL |
| Respiratory therapist: | | | | | | |
| A | 10 | 30 | 47 | 6 | 4.7 | 1.1,20 |
| B | 3 | 33 | 54 | 9 | 3.6 | 0.6,23 |
| C | 11 | 18 | 46 | 9 | 2.2 | 0.5,10 |

* Table restricted to respiratory therapists for whom R.R.>1.

**TABLE 4**

Effect of laboratory shift of specimen processing on respiratory and catheter cultures results.

| | Cases | | Controls | | | |
|---|---|---|---|---|---|---|
| | N | % | N | % | O.R. | 95% CL |
| Shift: | | | | | | |
| Non-day | 11 | 100 | 19 | 60 | undefined | 1.4*, inf. |
| Day | 0 | 0 | 13 | 40 | 1.0 | (reference) |
| | 11 | | 32 | | | |

* Exact Lower 95% CL

**Figure 1.**

Salmonella typhimurium positive cultures, by week of onset.

| [DATA] Date | Case # | type |
|---|---|---|
| 10/17 | 1 | NICU |
| 10/18 | 2 | NICU |
| 12/ 4 | 3 | PEDIATRIC |
| 12/15 | 4 | ADULT |
| 12/29 | 5 | NICU |
| 1/13 | 6 | NICU |
| 1/14 | 7 | NICU |
| 2/ 7 | 8 | NICU |
| 2/13 | 9 | PEDIATRIC |
| 3/10 | 10 | ADULT |
| 3/19 | 11 | ADULT |

**Figure 2.**

NICU-ETT cultures, by time of specimen collection.

[DATA]

| Time (hours) | cultures (n=32) | positive (n=26) | negative (n=6) |
|---|---|---|---|
| 7:00 a.m. | 1 | 0 | 1 |
| 8:00 | 4 | 0 | 4 |
| 9:00 | 0 | 0 | 0 |
| 10:00 | 2 | 0 | 2 |
| 11:00 | 4 | 0 | 4 |
| 12:00 | 4 | 0 | 4 |
| 1:00 p.m. | 0 | 0 | 0 |
| 2:00 | 0 | 0 | 0 |
| 3:00 | 2 | 0 | 2 |
| 4:00 | 2 | 2 | 0 |
| 5:00 | 2 | 0 | 2 |
| 6:00 | 1 | 0 | 1 |
| 7:00 | 1 | 1 | 0 |
| 8:00 | 0 | 0 | 0 |
| 9:00 | 0 | 0 | 0 |
| 10:00 | 2 | 1 | 1 |
| 11:00 | 1 | 1 | 0 |
| 12:00 | 2 | 0 | 2 |
| 1:00 a.m. | 1 | 0 | 1 |
| 2:00 | 0 | 0 | 0 |
| 3:00 | 0 | 0 | 0 |
| 4:00 | 0 | 0 | 0 |
| 5:00 | 2 | 1 | 1 |
| 6:00 | 1 | 0 | 1 |

[nurse day shift from 7:00 a.m. to 7:00 p.m.]

**Figure 3.**

Respiratory and catheter, cultures, by time of specimen processing.

[DATA]

| Time (hours) | cultures (n=43) | controls (n=32) | cases (n=11) |
|---|---|---|---|
| 7:00 a.m. | 2 | 2 | 0 |
| 8:00 | 1 | 1 | 0 |
| 9:00 | 0 | 0 | 0 |
| 10:00 | 1 | 1 | 0 |
| 11:00 | 4 | 4 | |
| 12:00 | 1 | 1 | 0 |
| 1:00 p.m. | 1 | 1 | 0 |
| 2:00 | 2 | 2 | 0 |
| 3:00 | 1 | 1 | 0 |
| 4:00 | 1 | 0 | 1 |
| 5:00 | 5 | 3 | 2 |
| 6:00 | 3 | 2 | 1 |
| 7:00 | 3 | 2 | 1 |
| 8:00 | 0 | 0 | |
| 9:00 | 3 | 3 | 0 |
| 10:00 | 3 | 2 | 1 |
| 11:00 | 0 | 0 | |
| 12:00 | 3 | 1 | 2 |
| 1:00 a.m. | 3 | 1 | 2 |
| 2:00 | 1 | 1 | 0 |
| 3:00 | 3 | 3 | 0 |
| 4:00 | 1 | 1 | 0 |
| 5:00 | 1 | 0 | 0 |
| 6:00 | 0 | 0 | 0 |

[Lab day shift from 7:00 a.m. to 3:00 p.m.]

## Update on the AIDS Surveillance Program

The Aids Surveillance Program is currently tracking reporting sources of Aids cases in order to better evaluate the effectiveness of surveillance activities. This will help focus and direct efforts to systematically expand the surveillance program. The data collected is used for state-wide planning and funding for programs such as the free AZT Program. The statistics are utilized for coordinating state-wide prevention and education activities and for projecting how to best plan for the numbers of persons with HIV infection and AIDS.

As the clinical expertise and therapies improve in managing AIDS, the trend appears to be toward more out-patient diagnosis. The top priority of the program is improved out-patient surveillance and your input, ideas, and assistance is requested. Please contact the AIDS Surveillance Program at 504-568-7525 if we can help facilitate the reporting process or assist you in any way. As always, confidentiality is strictly upheld and all personal identifiers are removed before notification to the Centers for Disease Control.

## Changing Faces in the Epidemiology Office - Office of Public Health

Dr. Bernard Moriniere served as the Epidemic Intelligence Service Officer from 1987 to 1989. During his assignment, Dr. Moriniere investigated a number of outbreaks, including outbreaks of influenza and shigella in nursing homes, a pertussis outbreak in the northern part of Louisiana, a shigella outbreak in the Shreveport region, and a pseudo-outbreak of nosocomial salmonellosis in a hospital facility. He developed a computerized vibrio surveillance program. He recently completed a study and will be publishing a paper on the simultaneous administration of childhood vaccines. Dr. Moriniere will be leaving us and heading for a post in the Immunization Branch at the Centers for Disease Control. We certainly will miss him and his French accent but wish him the very best.

The Epidemiology Section, is expanding the staff to include a medical epidemiologist. Agreement has been completed with the Office of Public Health and the Centers for Disease Control to equally fund this additional position.

Tom Farley, M.D. comes to us from Connecticut, where he has just finished two years as a CDC-assigned Epidemic Intelligence Service (EIS) Officer. He is a graduate of Haverford College and Tulane University School of Medicine (class of 1981). He completed a residency in pediatrics at Northwestern University in Chicago, and spent a year in a rural area of Haiti before working with the CDC. He is married to another pediatrician (Alice), and has two daughters, Emily (3 years) and Joanna (3 months).

Frank Mahoney, M.D. is the new EIS Officer assigned to us. He will join the team in July, 1989. He hails from the University of

Texas (Houston) and is board certified in family practice. He has worked at Truk State Hospital in Moen, Truk in the Federated States of Micronesia for the past three years. His wife is a registered dietitian with public health experience.

Efforts are underway to institute an Injury Control Program within the Office of Public Health. A comprehensive surveillance system including morbidity as well as mortality data is being evaluated. There is no doubt that the new staff members will not be lacking in activities to occupy their time.

## Gastrointestinal Illness Associated with School Field Trip

On December 15, 1988, Mrs. Betty DiMiceli, Sanitarian Services (SS), Jefferson Parish Health Unit (JPHU), notified the Epidemiology Section that 16 of a group of elementary school children who had attended a field trip that morning and had lunch at a fast-food restaurant reported being sick early in the afternoon with severe headache and gastro-intestinal symptoms.

Food histories and disease experience information were obtained by questionnaires administered to children at the school on December 16, or by phone to children (or their parents) absent from school.
The restaurant was inspected by SS-JPHU staff. The bus was inspected by the Department of Transportation for possible exhaust leaks that would have caused exposure of passengers to carbon monoxide.

Preliminary results include the following:

Of 52 children from grade 6 through 8 who participated in the field trip, 37 (71%) were present on 12/16 and completed questionnaires. Thirteen (25%) were contacted at home by phone on 12/16 or 12/17. Two were not contacted. Of 50 children for whom information is available, 40 (80%) reported one or more of the following symptoms in Table 5 below.

The time of onset of symptoms ranged from 12:15 p.m. to 2:30 p.m., with a median of 1:00 p.m., for a median incubation following lunch of 1.30 hour. Twelve (24%) children visited a physician, none were hospitalized. No blood specimen was taken to confirm or rule our carbon monoxide poisoning.

Two case-definitions were used in analyzing food-specific attack rates:
-general definition: occurrence of any symptom on 12/15 p.m.
-more specific definition: occurrence of abdominal cramps and vomiting on 12/15 p.m.

Forty (80%) children met the general definition.
Twenty-two (44%) children met the more specific definition.

Food specific attack rates using the more specific case definition were as in Table 6 below.
(Analysis using the general case definition fields similar results):
In summary, children who ate chicken nuggets were 3 times more likely to become ill than were those who did not. Children who ate sundae were 1.6 times as likely to become ill as were

those who did not, but this association is weaker and not significant at the 95% confidence level.

No samples of the suspected foods served on 12/15 were available at the restaurant for testing, and the ice-cream machine had been stopped and cleaned before samples were solicited.

Inspection of the bus exhaust system did not reveal deficiencies that could have caused exposure of passengers to carbon monoxide.

**DISCUSSION:**

An outbreak of gastrointestinal symptoms of mild severity occurred in an elementary school, involving 40 of 52 children grade 6 through 8 who had participated in a field trip and shared a meal at a fast-food restaurant. The symptoms and the short incubation (1.30 hour) are consistent with intoxication by a food-borne toxin or chemical. However, the incubation seems very short for a staphylococcal toxin poisoning. The food histories indicate an association between illness and eating chicken nuggets. Some children indicated that the nuggets were served with a mustard sauce that had an unusual odor. The sauce could have been involved as the vehicle of the intoxication.. Specimens have not been obtained for testing. Other hypotheses include carbon monoxide poisoning, which could not be confirmed, or a drug-related intoxication during the bus ride. No information is available to support this hypothesis, and this would be inconsistent with the association observed between illness and some food item.

Our recommendations include the following:

1. To conduct a formal inspection of the restaurant, with emphasis on food storage procedures, handling and storage of sauces and condiments, and ice-cream machine maintenance.

2. To collect information from every food handler on recent history of skin lesions and to stress the importance of standard hygienic precautions.

3. To inform the restaurant management that food samples should be saved for 48 hours.

**Table 5.** Symptoms reported by 50 children.
Field-trip outbreak, School A, December 15, 1988.

| | | |
|---|---|---|
| abnormal cramps: | 35 | 70% |
| vomiting : | 24 | 48% |
| nausea : | 24 | 48% |
| headache : | 13 | 26% |
| weakness : | 9 | 18% |
| chills : | 8 | 16% |
| fever : | 5 | 10% |
| diarrhea : | 3 | 6% |
| doctor's visit : | 12 | 24% |

**Table 6.** Food specific attack rates:
Field-trip outbreak, School A. December 15, 1988.

| | ATE | | | DID NOT EAT | | | | |
|---|---|---|---|---|---|---|---|---|
| | total | ill | Attack rate % | total | ill | Attack rate % | Relative risk | 95% CL |
| chicken nuggets | 26 | 17 | 65 | 24 | 5 | 21 | 3.1 | 1.4, 7.2 |
| ribs | 1 | 1 | 100 | 49 | 21 | 43 | 2.3 | N.S.* |
| sundae | 15 | 9 | 50 | 35 | 13 | 37 | 1.6 | 0.9, 2.9 |
| hamburger2 | 8 | 4 | 50 | 42 | 18 | 43 | 1.2 | N.S. |
| shake | 8 | 4 | 50 | 42 | 18 | 43 | 1.2 | N.S. |
| hamburger3 | 15 | 6 | 40 | 35 | 16 | 46 | .9 | N.S. |
| coke | 34 | 14 | 41 | 16 | 8 | 50 | .8 | N.S. |
| fries | 47 | 20 | 43 | 3 | 2 | 67 | .5 | N.S. |
| hamburger1 | 4 | 0 | 0 | 46 | 22 | 48 | 0.0 | N.S. |

* N.S.: not significant.

# Selected Reportable Diseases By Parish

## March 1989

| PARISH | AIDS | AMEB | ASEP MEN | CAMPY | HEP A | HEP B | HEP NON A-B | HEP UNSP | INFL | MEN H-FLU | MEN N CIV | MUMPS | PERT | SAL | SHIG | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACADIA | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| BIENVILLE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| BOSSIER | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 |
| CADDO | 1 | 0 | 0 | 0 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17 | 33 |
| CALCASIEU | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| CONCORDIA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| DE SOTO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| E. BATON ROU. | 5 | 2 | 0 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 30 |
| E. FELICIANA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| EVANGELINE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| FRANKLIN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| GRANT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| IBERIA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 5 |
| IBERVILLE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| JEFFERSON | 1 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 2 | 12 |
| LAFAYETTE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 4 | 0 | 24 |
| LAFOURCHE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 |
| NATCHITOCHES | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| ORLEANS | 14 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 8 | 1 | 31 |
| OUACHITA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| PLAQUEMINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| RAPIDES | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 5 |
| SABINE | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| ST. BERNARD | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 4 |
| ST. CHARLES | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| ST. JAMES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| ST. JOHN BAP. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 8 |
| ST. LANDRY | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| ST. MARTIN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| ST. TAMMANY | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 5 |
| TANGIPAHOA | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 4 |
| TERREBONNE | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 7 |
| VERMILION | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 |
| VERNON | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 7 |
| WASHINGTON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| WEBSTER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| W. CARROLL | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| WINN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| LIVINGSTON | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| TENSAS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| TOTAL | 26 | 2 | 2 | 3 | 27 | 23 | 2 | 0 | 2 | 6 | 4 | 49 | 1 | 41 | 49 | 237 |

# Selected Reported Diseases By Parish

## April 1989

| PARISH | AIDS | AMEB | ASEP MEN | CAMPY | ENCEPH OTH | HEP A | HEP B | HLP NON A-B | HLP UNSP | HISTO | LEGION | MALAR | INFL | MEAS IND | MEN H-FLU | MEN N CIV | MUMPS | PERT | RUB | SAL | SHIG | TET | VIBRIO OTH | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACADIA | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| ALLEN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| ASCENSION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| AVOYELLES | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| BEAUREGARD | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| BIENVILLE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| BOSSIER | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 7 |
| CADDO | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 16 | 0 | 0 | 26 |
| CALCASIEU | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 13 |
| CAMERON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| CONCORDIA | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| DE SOTO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| E. BATON ROU. | 4 | 2 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 5 | 0 | 0 | 7 | 7 | 0 | 0 | 37 |
| E. FELICIANA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| EVANGELINE | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| FRANKLIN | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| GRANT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| IBERIA | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 11 |
| IBERVILLE | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| JACKSON | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 13 |
| JEFFERSON | 7 | 0 | 2 | 0 | 0 | 1 | 12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 1 | 0 | 8 | 0 | 0 | 2 | 41 |
| LAFAYETTE | 1 | 0 | 2 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 5 | 5 | 1 | 0 | 2 | 59 |
| LAFOURCHE | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 4 |
| LASALLE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| LINCOLN | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| MOREHOUSE | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| NATCHITOCHES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| ORLEANS | 26 | 0 | 0 | 0 | 0 | 8 | 11 | 0 | 0 | 0 | 1 | 0 | 11 | 0 | 4 | 1 | 9 | 1 | 0 | 16 | 3 | 0 | 0 | 91 |
| OUACHITA | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 |
| PLAQUEMINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| PT. COUPEE | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| RAPIDES | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 7 |
| RED RIVER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| RICHLAND | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| SABINE | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| ST. BERNARD | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 7 |
| ST. CHARLES | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| ST. HELENA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| ST. JAMES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| ST. JOHN BAP. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| ST. LANDRY | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 0 | 0 | 0 | 3 | 0 | 0 | 17 |
| ST. MARTIN | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| ST. MARY | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| ST. TAMMANY | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 9 |
| TANGIPAHOA | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| TERREBONNE | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 1 | 1 | 0 | 1 | 19 |
| VERMILION | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| VERNON | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| WASHINGTON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| WEBSTER | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| W. CARROLL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WINN | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| TOTAL | 52 | 2 | 5 | 3 | 1 | 33* | 62 | 2 | 1 | 1 | 11 | 4 | 1 | 5 | 11 | 9 | 129 | 3 | 5 | 60 | 41 | 1 | 10 | 452 |

* 1 case parish unknown.

# BULLETINS

**CORRECTIONS FOR SEPTEMBER\DECEMBER, 1988 ISSUE**

**Healths Hints for International Travel**

**An error was made in the September\December issue. Please correct Table 2, Formula for treatment of diarrheal disease on page 14. Table salt should read 1 pinch instead of 8 ounces.**
**We apologize for the error.**

**Laboratory Testing for Lyme Disease**

**The Morbidity Report incorrectly recommended that Lyme Disease blood specimens be drawn within ten days of the onset of illness. Serum antibody titers to Lyme Disease rise slowly after the initial infection, so drawing blood this early may cause a false negative result. We recommend serologic testing be delayed for three weeks from the onset of the skin lesion (Erythema Migrans). Patients with suspected Lyme Disease who have already developed systemic manifestations (such as arthritis, carditis or meningitis) may be tested immediately.**

## INFLUENZA - October 31, 1989-March 31, 1989

During the period October 31, 1988-March 31, 1989 the state had a sentinel influenza surveillance system monitoring 19 schools, 7 physicians and 7 hospitals for influenza activity. The first case of influenza occurred in a 22 year old male from Morgan City. The system has identified a total of 2,892 reported cases of which 10 cases were confirmed as type A; 21 cases were type B. There were 20 children under 16 months of age confirmed with influenza. It is interesting to note that type A influenza virus did not begin to appear in the state until February, 1989. Prior case identification indicates illness occurring from December-February had been as a result of type B.

Because of the economic condition in the state only 60,000 doses of vaccine were purchased. A total of 55,772 doses or 93% were administered.

---

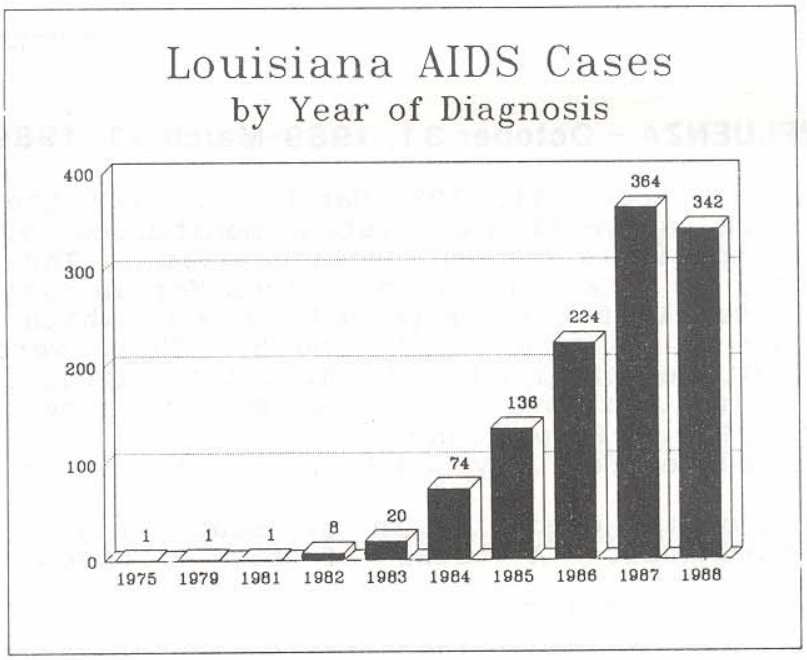
The Louisiana Morbidity Report is being redesigned. The disease summary tables utilized in the past couple of reports will be adapted further to provide additional information including cumulative totals. In an effort to get the report out in a more timely fashion some diseases/conditions have been left off of the tables. The following indicates total number of cases for 1989 through April 30.

Rabies in animals 5; Tuberculosis 54; SPUN 797 through March 31; Gonorrhea 8,043; Syphilis, Primary and Secondary 401.

# AIDS UPDATE

## January 1 - April 30, 1989

| | White | Black | Hispanic | Total |
|---|---|---|---|---|
| Male | 72 | 18 | 3 | 93 |
| Female | 4 | 3 | 0 | 7 |
| Total | 76 | 21 | 3 | 100 |




**NEW VACCINE REQUIREMENT FOR DAY CARE CENTER ENROLLMENT**

Effective 10/1/89, Haemophilus influenzae type b vaccine will be required of every child enrolled in nursery school or day care centers in the state. The vaccine will be required for all children between 18 months and 60 months of age. The immunizations are available at all parish health units or from private physicians. Questions may be directed to the Immunization Program at 504-568-5007 in New Orleans.

RAOULT C RATARD MD
4109 CLEVELAND PL
METAIRIE LA 70003-1343

04591R

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

BULK RATE
U.S. POSTAGE
PAID
NEW ORLEANS, LA
PERMIT No. 471

This public document was published at a total cost of $1269.00. Seven thousand five hundred copies of this public document were published in this first printing at a cost of $1269.00. The total cost of all printings of this document including reprints is $1269.00. This document was published by the Department of Social Services Printing Facility, 2636 Daisy Street, Baton Rouge, Louisiana 70805, to inform Physicians, hospitals, and the public of current Louisiana morbidity status under authority of R.S. 40:36. This material was printed in accordance with standards for printing by State Agencies established pursuant to R.S. 43:31.