STAPHYLOCOCCAL FOOD POISONING
Ponce, Puerto Rico

An outbreak of food poisoning occurred on September 3, 1968, in Ponce, Puerto Rico, among doctors, nurses, student nurses, and employees of the Ponce District Hospital following a luncheon in the hospital cafeteria. Of a total of 446 employees eligible to eat the noon meal, as many as 143 individuals may have become ill with symptoms characterized by abdominal pain, headache, dizziness, vomiting, and less frequently diarrhea giving an attack rate of 32 percent. The epidemic curve suggests a common source of exposure and a short incubation period with a mean of 4 hours (Figure 1).

Food histories implicated ham as the vehicle of infection (Table 1). The ham was prepared by a catering service on the day of the outbreak and delivered to the cafeteria. While in transit the food was kept at room temperature.

(Continued on page 378)
STAPHYLOCOCCAL FOOD POISONING — (Continued from front page)

Figure 1

Cases of food poisoning, by incubation period
Ponce District Hospital, Puerto Rico
September 3, 1968

Table 1

<table>
<thead>
<tr>
<th>Food</th>
<th>Persons who ATE specified food</th>
<th>Persons who did NOT eat specified food</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ill</td>
<td>Not Ill</td>
</tr>
<tr>
<td>Rice with sausages</td>
<td>64</td>
<td>120</td>
</tr>
<tr>
<td>Ham</td>
<td>71</td>
<td>124</td>
</tr>
<tr>
<td>Pie</td>
<td>47</td>
<td>101</td>
</tr>
<tr>
<td>Bread</td>
<td>55</td>
<td>124</td>
</tr>
<tr>
<td>Milk</td>
<td>67</td>
<td>141</td>
</tr>
<tr>
<td>Beans</td>
<td>32</td>
<td>45</td>
</tr>
</tbody>
</table>

Cultures of leftover ham, vomitus from patients, and nose and throat specimens from food handlers at the catering service, all grew abundant Staphylococcus aureus, coagulase positive. Inspection of the caterer's kitchen facilities revealed crowded conditions and several violations of recommended sanitary practices.

(Reported by Bernardo Pineiro, M.D., Medical Director, and Modesto Reyes Reyes, M.S.S., Regional Supervisor, Environmental Health, Southern Health Region; Luis Mainardi, M.D., M.P.H., Chief, Communicable Disease Control, Carlos N. Vicens, M.D., Director, Program for Preventive Medicine, and Angel A. Colon, M.D., Ph.D., Director, Institute of Laboratories, Puerto Rico Department of Public Health; and EIS Officers.)

TRANSFUSION MALARIA — Dallas, Texas

In April 1968, a 36-year-old man with chronic renal failure underwent bilateral nephrectomies and incidental splenectomy in preparation for a renal transplant. Postoperatively, he was maintained on biweekly hemodialysis. On July 20, he developed chills and fever, and on July 30, Plasmodium malariae parasites were detected on a routine blood smear. Previous blood smears were then reviewed and parasites were detected from as early as July 18. The patient was treated with chloroquine and primaquine, and he made an uneventful recovery. He had no history of malaria or use of shared syringes and had not traveled outside the United States except for two brief trips across the border from Texas into northern Mexico, 15 years previously. However, in the preoperative treatment of his renal insufficiency and during his postoperative hemodialysis, he had received 56 units of whole blood.

Of the 56 blood donors, 33 were located and interviewed; none gave a history of malaria, but 13 had traveled to malarious areas. Serum was obtained from eight of the 13 and analyzed for the presence of malaria antibodies by the indirect fluorescent technique. Only one of the eight, a 21-year-old Nigerian exchange student, had a positive serologic test. The dilution end points in his serum were 1:2,560 against P. malariae, 1:640 against P. falciparum, and 1:160 against P. ovale and P. vivax; these results indicated a recent P. malariae infection. Blood smears were obtained from this donor on several occasions, but no malaria parasites were detected. On August 23, 1968, 10 ml of his fresh blood were given intravenously to a volunteer recipient, and on September 10, P. malariae parasites were detected in the volunteer’s peripheral blood. On repeated questioning, the Nigerian donor denied having had malaria at any time in his life. He had been well since arriving in the United States in June 1966; he had not used antimalarial drugs. The blood which he donated on June 15 was given to the patient on June 17.

(Reported by James P. Luby, M.D., and Paul M. Southern, Jr., M.D., Department of Internal Medicine, University of Texas Southwestern Medical School at Dallas; Hal J. Dewlett, M.D., M.P.H., Dallas City Health Department; M.S. Dickerson, M.D., M.P.H., Director, Communicable Disease Division, Texas State Department of Health; and Peter G. Contacos, M.D., Head, Section on Primate Malaria, Laboratory of Parasite Chemotherapy, National Institute of Health, Chamblee, Georgia.)

Editorial Note:

Plasmodium malariae is endemic in Nigeria. Infections caused by this species are noted for their chronic and benign nature (relapses have been noted after more than 20 years in some cases) and tendency to persist at very...
low parasite densities in the immune host. The absence of a history of illness in the responsible donor suggests that he had contracted malaria as a child and acquired sufficient immunity to permit his subsequent asymptomatic sub-patent parasitemia. The case also illustrates that for induced malaria the infective dose of *P. malariae* trophozoites can be below the level detectable by examination of peripheral blood smears.

**SUSPECT SCRUB TYPHUS – Kansas**

On March 24, 1968, a 21-year-old serviceman who had just arrived in Topeka, Kansas, after 13 months of duty in Vietnam complained of fever, malaise, painful swelling in the left groin, and a papular lesion on the left thigh. On March 26 he consulted a physician who prescribed sulfa-diazine, and on March 27 he was hospitalized for diagnostic evaluation.

On admission, the patient’s liver was slightly enlarged and his spleen was palpable; he had a 3-4 cm tender left inguinal node and a raised papule on the anterolateral aspect of his left leg. Laboratory studies revealed hematuria and a cerebral spinal fluid pleocytosis consisting of 12 lymphocytes. He also had a direct reacting bilirubin of 4.8 mgm per 100 ml, 80 percent of which was unconjugated. Other liver function tests were normal, and febrile agglutinins were unrevealing. Cultures, including one of fluid taken from the inguinal lymph node, and direct staining of the lymph aspirate were all negative. On March 31, the possibility of plague was considered, and after several blood specimens were taken, the patient was started on chloromycetin and streptomycin. His temperature was normal 48 hours later. Examination on April 5 revealed a round ulcer-like lesion on the anterior left hip and a 1-2 cm left inguinal node. The patient has now recovered.

During the last month of the patient’s service in Vietnam, he had worked and slept in a warehouse. He reported having seen and heard rats, but he denied having handled them or seen any dead animals.

The patient’s military record showed that he had received an injection of plague vaccine on March 15, 1968. A serum titer to *Pasteurella pestis* of 1:128 was demonstrated in the patient’s acute phase serum, but this was believed compatible with the immunization history. Sera, drawn on April 5 (12 days after onset of illness) and on April 25, had a titer of 1:640 for *Rickettsia tsutsugamushi*, using an indirect immunofluorescent test. A complement fixation test for the spotted fever group was negative in both sera. This high titer is compatible with a recent infection with *R. tsutsugamushi* and strongly suggests that the disease was scrub typhus.

(Reported by William Hamilton, M.D., MC, USA, Fort Riley, Kansas; Ralph Singer, Colonel, MC, USA,; Bennett Elisberg, M.D., Chief, Department of Rickettsial Diseases, Walter Reed Army Institute of Research; Virus Disease Section, Ecological Investigations Program, NCDC, Kansas City, Kansas; and an EIS Officer.)

**Editorial Note:**

Scrub typhus is not a notifiable disease in the United States but is reported optionally by states. Since 1951 only one case has been reported to NCDC, that in an ill Vietnam returnee reported from Florida in 1966. However, 129 cases of scrub typhus were reported by the armed services for the 2-year period, 1966-1967 (Table 2).

<table>
<thead>
<tr>
<th>Year</th>
<th>Service Branch</th>
<th>Number of Cases</th>
<th>Rate per 1,000 Troops per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>Army</td>
<td>37</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Navy and Marines</td>
<td>1</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Air Force</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td>1967</td>
<td>Army</td>
<td>54</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Navy and Marines</td>
<td>34</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Air Force</td>
<td>2</td>
<td>0.04</td>
</tr>
</tbody>
</table>


**SURVEILLANCE SUMMARY**

**MEASLES – United States**

For the week ending October 5, 1968 (week 40), there were 108 cases of measles reported to the NCDC. This is a decrease of 116 cases from the 224 cases reported in the corresponding week last year. The number of cases reported in the 4-week period ending October 5, 1968, shows a slight decrease in reported cases from the preceding 4 weeks (Figure 2, inset).

For epidemiologic year* (EY) 1967-68, a total of 23,883 cases of measles were reported to the NCDC. This number is the lowest recorded total for any epidemiologic year and represents 34 percent, 11 percent, and 9 percent of the cases reported for EY 1966-67, 1965-66, and 1964-65, respectively. This reduction, in addition to reflecting a steady improvement in immunization status, also reflects improved reporting techniques at the state level; several states initiated individual case investigation programs which resulted in a significant number of cases being deleted from official records (New Jersey, MMWR, Vol. 17, No. 24 and Los Angeles, MMWR, Vol. 17, No. 25). Some investigations resulted in reporting additional cases (Louisiana, MMWR, Vol. 17, No. 38). Continued efforts in the coming year should result in further improvements in the accuracy of reporting.

Beginning in EY 1966-67 a change in the seasonal pattern of reported measles was noted (Figure 2). This (Continued on page 380)
MEASLES — (Continued from page 379)

Figure 2
REPORTED MEASLES BY 4-WEEK PERIOD, USA
EPIDEMIOLOGIC YEARS 1964-65 THROUGH 1967-68

In Table 3, the reported cases of measles by geographic division for EY 1967-68 are compared with the cases reported for FY 1966-67, 1965-66, and 1964-65. During the 2 epidemiologic years prior to the initiation of the national measles eradication program in October 1966, five of the nine geographic divisions showed an increase in the cases reported from the preceding epidemiologic year (the Middle Atlantic, East North Central, and East South Central in EY 1965-66 and the New England and Mountain in EY 1964-65); however, in EY 1966-67, all

Table 3
Reported Measles by Geographic Divisions, USA, Epidemiologic Years, 1964-65 through 1967-68 and Percent Change from Preceding Epidem iologic Year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>Year</td>
<td>Year</td>
<td>Year</td>
<td>Year</td>
</tr>
<tr>
<td>Percent decrease</td>
<td>from 1966-67</td>
<td>from 1965-66</td>
<td>from 1964-65</td>
<td>from 1963-64</td>
</tr>
<tr>
<td>United States</td>
<td>23,883</td>
<td>70,638</td>
<td>213,992</td>
<td>266,310</td>
</tr>
<tr>
<td></td>
<td>66.2%</td>
<td>67.0%</td>
<td>19.6%</td>
<td>45.7%</td>
</tr>
<tr>
<td>New England</td>
<td>1,268</td>
<td>1,179</td>
<td>9,902</td>
<td>42,448</td>
</tr>
<tr>
<td></td>
<td>7.5%</td>
<td>93.2%</td>
<td>93.2%</td>
<td>125.5%</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>4,470</td>
<td>2,923</td>
<td>22,542</td>
<td>59,955</td>
</tr>
<tr>
<td></td>
<td>52.9%</td>
<td>87.0%</td>
<td>38.3%</td>
<td>44.6%</td>
</tr>
<tr>
<td>East North Central</td>
<td>4,657</td>
<td>7,256</td>
<td>77,616</td>
<td>50,955</td>
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<tr>
<td></td>
<td>35.8%</td>
<td>90.7%</td>
<td>29.5%</td>
<td>44.6%</td>
</tr>
<tr>
<td>West North Central</td>
<td>524</td>
<td>3,557</td>
<td>9,656</td>
<td>15,913</td>
</tr>
<tr>
<td></td>
<td>85.3%</td>
<td>63.2%</td>
<td>48.4%</td>
<td>42.5%</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>1,992</td>
<td>7,964</td>
<td>17,430</td>
<td>27,391</td>
</tr>
<tr>
<td></td>
<td>75.0%</td>
<td>54.3%</td>
<td>36.4%</td>
<td>34.8%</td>
</tr>
<tr>
<td>East South Central</td>
<td>806</td>
<td>6,356</td>
<td>22,162</td>
<td>15,596</td>
</tr>
<tr>
<td></td>
<td>87.2%</td>
<td>71.6%</td>
<td>42.1%</td>
<td>77.8%</td>
</tr>
<tr>
<td>West South Central</td>
<td>5,647</td>
<td>20,445</td>
<td>25,923</td>
<td>32,857</td>
</tr>
<tr>
<td></td>
<td>72.4%</td>
<td>21.1%</td>
<td>21.1%</td>
<td>55.2%</td>
</tr>
<tr>
<td>Mountain</td>
<td>1,362</td>
<td>5,491</td>
<td>13,272</td>
<td>22,947</td>
</tr>
<tr>
<td></td>
<td>75.2%</td>
<td>58.6%</td>
<td>42.2%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Pacific</td>
<td>3,157</td>
<td>15,540</td>
<td>22,459</td>
<td>30,806</td>
</tr>
<tr>
<td></td>
<td>79.7%</td>
<td>30.9%</td>
<td>27.0%</td>
<td>55.0%</td>
</tr>
</tbody>
</table>

*Bold type indicates increase over preceding epidemiologic year.

change is even more evident in the current epidemiologic year (Figure 2, inset).
geographic divisions showed a substantial decrease; seven of the nine showed more than a 50 percent reduction.

For EY 1967-68, the nation as a whole showed approximately the same rate of decrease from 1966-67 as was noted in EY 1966-67 from the preceding epidemiologic year. However, there were two geographic divisions that did not follow this pattern. The New England and Middle Atlantic divisions showed an increase. These increases may reflect inadequate immunization maintenance programs following mass immunization programs. With the exception of the East North Central division, which had noted the highest rate of decrease in EY 1966-67, all other geographic divisions showed a higher rate of decrease in EY 1967-68 than was noted for the preceding epidemiologic year. All of these six divisions reported between 13 and 28 percent as many cases as each had reported during the previous epidemiologic year.

(Reported by State Services Section, and Statistics Section, Epidemiology Program, NCDC.)

The epidemiologic year for measles begins with week number 41 of the calendar year and ends with week number 40 of the succeeding year.

FOODBORNE DISEASE OUTBREAKS - January-June 1968

During the first 6 months of 1968, 31 states, Washington, D.C., and Puerto Rico reported 115 outbreaks of foodborne diseases to NCDC (Figure 3). These surveillance data have been compiled in an effort to characterize and to quantitate diseases caused by foodborne outbreaks, to study the types of vehicles and sources of contamination particularly when interstate products are involved, and to suggest possible control measures.

Although the data collected represent only a small percentage of the total number of outbreaks that occur in the United States, various trends and the predominance of certain etiologic agents became apparent. The total number of people affected in the 115 outbreaks during the first 6 months of 1968 was 7,663 (Table 4). The etiology was confirmed in 69 of the 115 outbreaks (60 percent). Clostridium perfringens was most frequently the cause of illness and accounted for 2,761 cases in 21 outbreaks. Staphylococcal food poisoning was second accounting for 2,391 cases in 29 outbreaks. Turkey, beef, and chicken were the vehicles most frequently responsible for C. perfringens outbreaks (Table 5). Pork, beef, vegetables, and chicken

(Continued on page 382)
Table 5

**Vehicles Associated with Foodborne Illness of Specific Etiology**

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Turkey</th>
<th>Chicken</th>
<th>Egg</th>
<th>Milk</th>
<th>Beef</th>
<th>Pork</th>
<th>Other meat</th>
<th>Vegetables</th>
<th>Shellfish</th>
<th>Other fish</th>
<th>Water</th>
<th>Other</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Brucella</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><em>C. botulinum</em></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>C. perfringens</em>2</td>
<td>9*</td>
<td>3*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><em>E. coli</em></td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Salmonella3</td>
<td>1*</td>
<td>1</td>
<td></td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shigella</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><em>Staphylococcus</em>4</td>
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<td>4</td>
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<td>5</td>
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<td>4</td>
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<td>Streptococcus</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><em>Trichinella spiralis</em></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Viral</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Chemical3</td>
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<td></td>
<td>2</td>
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<td></td>
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<td></td>
<td>4</td>
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<td>Miscellaneous</td>
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<td></td>
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<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total             | 15     | 10     | 6   | 1    | 23   | 14   | 6          | 16         | 4          | 5          | 3     | 11    | 10      |

1. Includes suspected as well as proven vehicles
2. Three outbreaks with two vehicles
3. One outbreak with two vehicles
4. Two outbreaks with two vehicles and one outbreak with three vehicles
*Includes some outbreaks due to meat and/or gravy and/or dressing

Table 6

**Sources of Contamination of Vehicles in Foodborne Illness by Etiology**

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Packaged or bulk food</th>
<th>Commercially prepared food</th>
<th>Home prepared</th>
<th>Unknown - unspecified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brucella</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>C. botulinum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>C. perfringens</em>2</td>
<td>1*</td>
<td>7</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td><em>E. coli</em></td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Salmonella</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Shigella</td>
<td>1</td>
<td>17</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td><em>Staphylococcus</em>4</td>
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<td></td>
<td></td>
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<tr>
<td>Streptococcus</td>
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<td></td>
</tr>
<tr>
<td>Parasitic</td>
<td><strong>Trichinella spiralis</strong></td>
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</tr>
<tr>
<td>Viral</td>
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</tr>
<tr>
<td>Hepatitis</td>
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<td>1</td>
<td>1</td>
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</tr>
<tr>
<td>Chemical3</td>
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<td>1</td>
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</tr>
<tr>
<td>Miscellaneous</td>
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<td>Total</td>
<td>8</td>
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<td>13</td>
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</table>

*Suspected not proven
were the most often incriminated vehicles in staphylococcal outbreaks.

When the data were studied to determine the source of contamination of the vehicles involved in the foodborne outbreaks (Table 6), it was found that 48 (42 percent) were contaminated during processing in a commercial establishment for public consumption, 13 (11 percent) contaminated during processing in the home, and 8 (7 percent) contaminated in preparation for marketing. The largest number of outbreaks (37) occurred in restaurants and involved 1,913 individuals (Table 7). The largest number of cases occurred in schools (2,750) accounting for 11 outbreaks. While 32 outbreaks took place in homes, only 316 persons were affected. Illness due to brucella, C. botulinum, and Trichinella spiralis tended to occur at home and that due to C. perfringens and S. aureus in public facilities.

A copy of the original report from which these data were derived is available on request from:
National Communicable Disease Center
Attn: Chief, Enteric Diseases Unit
Bacterial Diseases Section, Epidemiology Program, and Laboratory Program, NCDC.

HUMAN LISTERIOSIS – United States 1967

In 1967 a total of 60 human cases of listeriosis were reported to NCDC from 24 states. At least 10 of the 60 cases (16.7 percent) were fatal. Of the 50 cases where sex was reported, 34 were males and 16 were females (Table 8). More cases occurred in infants less than 1 year old than in any other age group. Infesting serotypes were identified in 38 of the 60 cases and the most frequently identified was Listeria monocytogenes type 1b (Table 9).

Listeriosis is not a reportable disease. However, cases are being voluntarily reported to NCDC with increasing frequency. At present there is only limited information on the pathogenesis, epidemiology, epizootiology, clinical manifestations, laboratory diagnosis, and reservoirs of this disease. Interested laboratories and public health departments are encouraged to contribute complete case histories, cultures for serotyping, and sera for serologic diagnosis to NCDC. Cultures and sera may be addressed to:

National Communicable Disease Center
Atlanta, Georgia 30333
Attn: Chief, Bacterial Serology Unit
Laboratory Program

(Continued on page 388)
### TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDED OCTOBER 12, 1968 AND OCTOBER 14, 1967 (41st WEEK)

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<th>ENCEPHALITIS</th>
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*Delayed reports: Aseptic meningitis: Mont. 1  Encephalitis, primary: Mont. 4  Hepatitis serum: N. Y. Upstate 6  Hepatitis infectious: Me. 1, N. J. delete 5  Malaria: Iowa 1** Delayed military case reports

**Delayed military case reports
TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDED OCTOBER 12, 1968 AND OCTOBER 14, 1967 (41st WEEK) - CONTINUED

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*Delayed reports: Measles: N.J. delete 32, Pa. delete 5, Ariz. delete 6, Alaska 7
Mumps: Me. 21
Rubella: Me. 1
### TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
OCTOBER 12, 1968 AND OCTOBER 14, 1967 (41st WEEK) - CONTINUED

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*Delayed reports: SST: Mo. 29
Tetanus: La. delete 1
Rabies in animals: S.D. 18
### TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED OCTOBER 12, 1928

(Excludes fetal deaths)

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<td>145</td>
<td>88</td>
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<tr>
<td>Mobile, Ala.</td>
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<td>1</td>
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<tr>
<td>Montgomery, Ala.</td>
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<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Nashville, Tenn.</td>
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<td>50</td>
<td>6</td>
</tr>
<tr>
<td>CITY OF NEW YORK:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>All Causes</td>
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<td>920</td>
<td>35</td>
</tr>
<tr>
<td>PATTON, N.J.</td>
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</tr>
<tr>
<td>Philadelphia, Pa.</td>
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<td>226</td>
<td>5</td>
</tr>
<tr>
<td>Pittsburgh, Pa.</td>
<td>197</td>
<td>110</td>
<td>4</td>
</tr>
<tr>
<td>Reading, Pa.</td>
<td>48</td>
<td>29</td>
<td>2</td>
</tr>
<tr>
<td>Rochester, N.Y.</td>
<td>97</td>
<td>61</td>
<td>7</td>
</tr>
<tr>
<td>Scranton, Pa.</td>
<td>15</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Syracuse, N.Y.</td>
<td>117</td>
<td>78</td>
<td>1</td>
</tr>
<tr>
<td>Trenton, N.J.</td>
<td>40</td>
<td>24</td>
<td>-</td>
</tr>
<tr>
<td>Utica, N.Y.</td>
<td>40</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Yonkers, N.Y.</td>
<td>40</td>
<td>29</td>
<td>-</td>
</tr>
<tr>
<td>EAST NORTH CENTRAL:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akron, Ohio</td>
<td>65</td>
<td>37</td>
<td>-</td>
</tr>
<tr>
<td>Canton, Ohio</td>
<td>37</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Chicago, III</td>
<td>750</td>
<td>416</td>
<td>23</td>
</tr>
<tr>
<td>Cincinnati, Ohio</td>
<td>186</td>
<td>109</td>
<td>7</td>
</tr>
<tr>
<td>Cleveland, Ohio</td>
<td>224</td>
<td>108</td>
<td>10</td>
</tr>
<tr>
<td>Columbus, Ohio</td>
<td>99</td>
<td>57</td>
<td>-</td>
</tr>
<tr>
<td>Dayton, Ohio</td>
<td>78</td>
<td>44</td>
<td>1</td>
</tr>
<tr>
<td>Detroit, Mich.</td>
<td>349</td>
<td>177</td>
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</tr>
<tr>
<td>Evansville, Ind.</td>
<td>35</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Flint, Mich.</td>
<td>40</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Fort Wayne, Ind.</td>
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<td>20</td>
<td>3</td>
</tr>
<tr>
<td>Gary, Ind.</td>
<td>34</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Grand Rapids, Mich.</td>
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<td>38</td>
<td>4</td>
</tr>
<tr>
<td>Indianapolis, Ind.</td>
<td>161</td>
<td>86</td>
<td>6</td>
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<tr>
<td>Madison, Wis.</td>
<td>34</td>
<td>16</td>
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</tr>
<tr>
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<td>114</td>
<td>67</td>
<td>3</td>
</tr>
<tr>
<td>Peoria, Ill.</td>
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<td>17</td>
<td>-</td>
</tr>
<tr>
<td>Rockford, Ill.</td>
<td>35</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>South Bend, Ind.</td>
<td>47</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>St. Louis, Mo.</td>
<td>106</td>
<td>79</td>
<td>5</td>
</tr>
<tr>
<td>Youngstown, Ohio</td>
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<td>24</td>
<td>1</td>
</tr>
<tr>
<td>WEST NORTH CENTRAL:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Des Moines, Iowa</td>
<td>821</td>
<td>512</td>
<td>25</td>
</tr>
<tr>
<td>Duluth, Minn.</td>
<td>25</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>Kansas City, Kan.</td>
<td>45</td>
<td>23</td>
<td>4</td>
</tr>
<tr>
<td>Kansas City, Mo.</td>
<td>166</td>
<td>84</td>
<td>4</td>
</tr>
<tr>
<td>Lincoln, Nebr.</td>
<td>37</td>
<td>30</td>
<td>-</td>
</tr>
<tr>
<td>Minneapolis, Minn.</td>
<td>97</td>
<td>67</td>
<td>2</td>
</tr>
<tr>
<td>Omaha, Nebr.</td>
<td>72</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>St. Louis, Mo.</td>
<td>229</td>
<td>137</td>
<td>4</td>
</tr>
<tr>
<td>St. Paul, Minn.</td>
<td>71</td>
<td>44</td>
<td>1</td>
</tr>
<tr>
<td>Wichita, Kan.</td>
<td>57</td>
<td>37</td>
<td>3</td>
</tr>
</tbody>
</table>

*Estimate - based on average percent of divisional total.

**Cumulative Totals**

<table>
<thead>
<tr>
<th></th>
<th>All Causes</th>
<th>Age 65 and over</th>
<th>Pneumonia and Influenza</th>
<th>Under 1 year Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>12,193</td>
<td>6,900</td>
<td>387</td>
<td>606</td>
</tr>
</tbody>
</table>

*Including reported corrections for previous weeks

**All Causes, All Ages** | 520,889
**All Causes, Age 65 and over** | 299,681
**Pneumonia and Influenza, All Ages** | 20,845
**All Causes, Under 1 Year of Age** | 24,703
**LISTERIOSIS**

(Continued from page 383)

### Table 8

**Reported Cases of Human Listeriosis by Sex and Age**  
**United States, 1967**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>10</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>1-9</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10-19</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>20-29</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>30-39</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>40-49</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>50-59</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>60-69</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>70 or &gt;70</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>34</td>
<td>16</td>
<td>50</td>
</tr>
</tbody>
</table>

### Table 9

**Human Listeriosis by Infecting Serotype**  
**United States, 1967**

<table>
<thead>
<tr>
<th>Cases</th>
<th>Infecting Serotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1a</td>
</tr>
<tr>
<td>17</td>
<td>1b</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>4a</td>
</tr>
<tr>
<td>8</td>
<td>4b</td>
</tr>
<tr>
<td>4</td>
<td>4d</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>22</td>
<td>Unknown*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>60</td>
</tr>
</tbody>
</table>

*Cases in which no isolate was submitted to NCDC.

(Reported by Zoonoses Surveillance Unit, Veterinary Public Health Section, Epidemiologic Program, and Bacteriology Section, Laboratory Program, NCDC.)

A copy of the original report from which these data were derived is available on request from:
National Communicable Disease Center  
Atlanta, Georgia 30333  
Attn: Chief, Zoonoses Surveillance Unit, Veterinary Public Health Section, Epidemiology Program