REPORT No. 39
ANNUAL SUMMARY 1976
Issued October 1977

*center for disease control*

# SHIGELLA

*surveillance*

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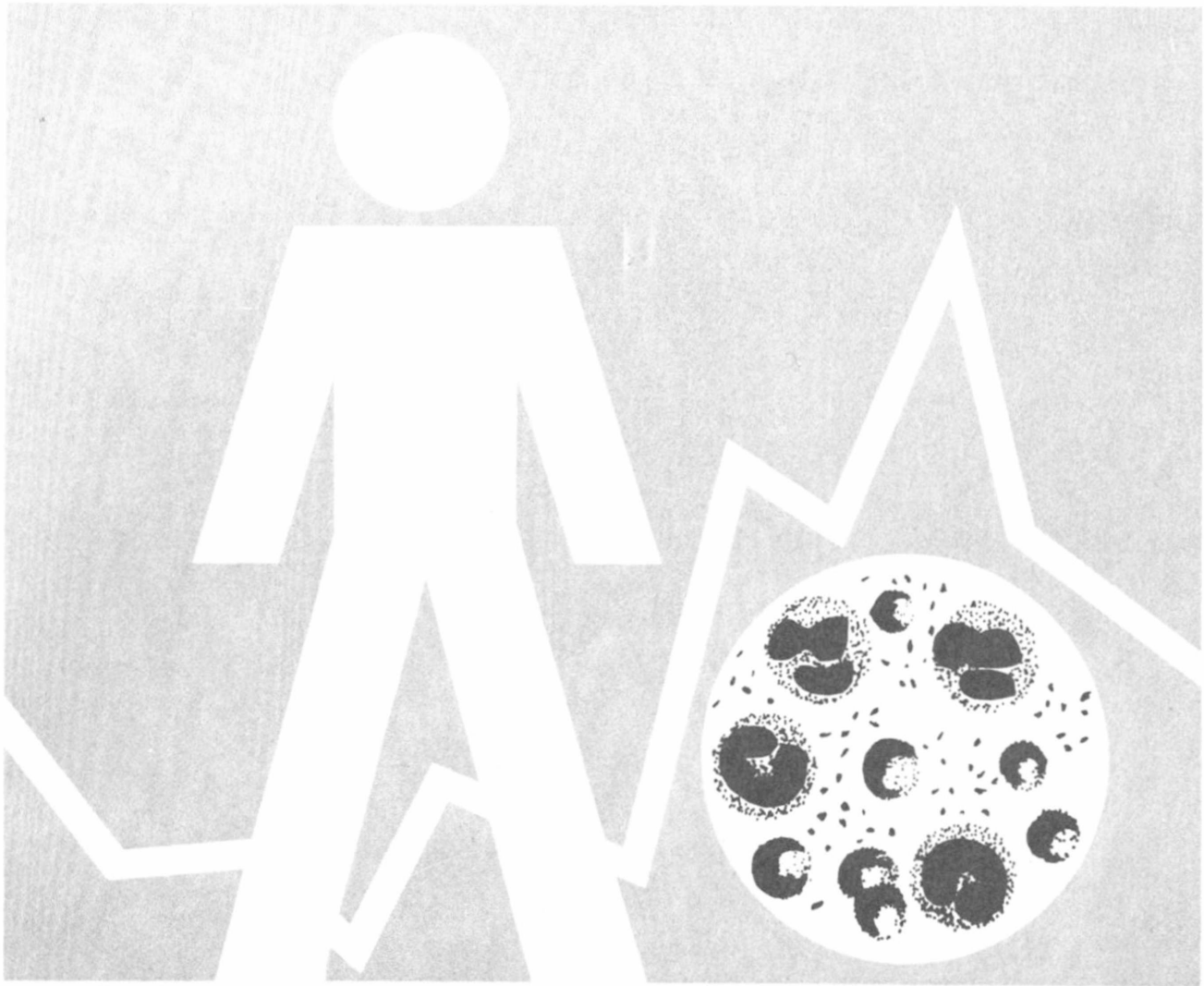
for the
Year 1976





U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE: PUBLIC HEALTH SERVICE

# PREFACE

This report summarizes data voluntarily reported from participating states, territorial, and city health departments. Much of the information is preliminary. It is intended primarily for the use of those with responsibility for disease control activities. Anyone desiring to quote this report should contact the original investigators for confirmation and interpretation.

Contributions to the surveillance report are most welcome. Please address to:

Center for Disease Control
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SUGGESTED CITATION

Center for Disease Control: Shigella Surveillance Report No. 39
Annual Summary 1976; issued October 1977

## I. SUMMARY

For 1976, 7,907 Shigella isolations from humans were reported to the Center for Disease Control. This was a decrease of 46.4% from the 14,757 isolations reported in 1975* (Table I, 1st, 2nd, 3rd, and 4th quarters); part of the decrease can be explained by California's discontinuing reporting in 1976.

Utilizing population estimates for July 1, 1976, approximately 40.9 isolations were reported for each million population of the United States in 1976*. The corresponding rates for 1974 and 1975 were 84.0 and 56.8, respectively.*

## II. REPORTED ISOLATIONS

### A. Human

1. General Incidence. For 1976, 57.9% of reported isolations from persons identified by age were from children under 10 years of age (Table 1); this is consistent with previous years. The highest rate of isolation was from persons in the 1 to 4-year age group.

Table 1

Cases of Shigellosis, by Age and Sex, 1976*

| Age (Years) | Male | Female | Unknown | Total | Percent | Cumulative Percent | Isolations Per Million Population |
|---|---|---|---|---|---|---|---|
| Under 1 | 180 | 137 | 2 | 319 | 5.3 | 5.3 | 105.4 |
| 1 - 4 | 1146 | 1032 | 5 | 2183 | 36.5 | 41.8 | 177.3 |
| 5 - 9 | 474 | 484 | 2 | 960 | 16.0 | 57.9 | 55.3 |
| 10 - 19 | 331 | 348 | - | 679 | 11.4 | 69.2 | 16.6 |
| 20 - 29 | 401 | 509 | 2 | 912 | 15.2 | 84.5 | 24.5 |
| 30 - 39 | 212 | 209 | - | 421 | 7.0 | 91.5 | 16.2 |
| 40 - 49 | 101 | 114 | - | 215 | 3.6 | 95.1 | 9.4 |
| 50 - 59 | 49 | 87 | 2 | 138 | 2.3 | 97.4 | 6.1 |
| 60 - 69 | 27 | 59 | - | 86 | 1.4 | 98.8 | 4.9 |
| 70 - 79 | 25 | 23 | - | 48 | 0.8 | 99.6 | 4.8 |
| 80 or over | 11 | 10 | - | 21 | 0.4 | 100.0 | 4.5 |
| Subtotal | 2957 | 3012 | 13 | 5982 | | | |
| Child (Unspec) | 30 | 24 | 2 | 56 | | | |
| Adult (Unspec) | 14 | 17 | 1 | 32 | | | |
| Unknown | 930 | 858 | 49 | 1837 | | | |
| Total | 3931 | 3911 | 65 | 7907 | | | |
| Percent | 50.1 | 49.9 | | | | | |

*California not included

*excluding California

HEW Publication No. (CDC) 78-8225

2. Serotype Frequency. Fifty-two of the 54 centers participating in the Shigella Surveillance Program reported isolation of 30 different serotypes.

Isolates that were not serotyped were distributed among reported serotypes in the same proportions as isolates that were serotyped (Table 2).

Table 2

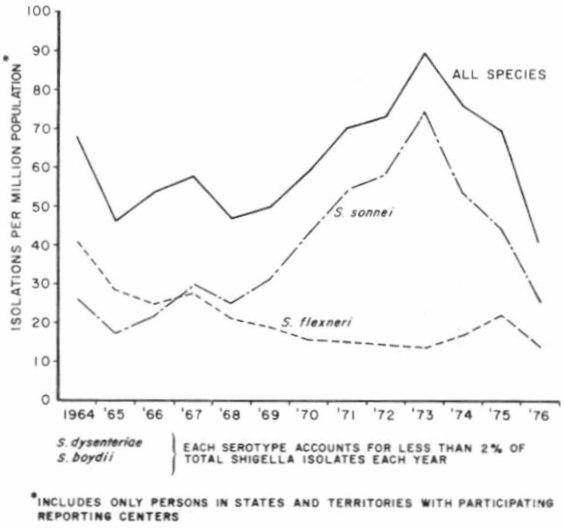
Relative Frequencies of Shigella Serotypes, 1976

| Serotype | Number Reported | Calculated Number | Calculated Percent | Rank |
|---|---|---|---|---|
| A. S. dysenteriae | | | | |
| Unspecified | 14 | | | |
| 1 | 10 | 12 | 0.1 | 17 |
| 2 | 39 | 46 | 0.6 | 11 |
| 3 | 18 | 21 | 0.3 | 14 |
| 4 | 4 | 5 | 0.1 | 22.5 |
| 6 | 1 | 1 | 0.0 | 27 |
| 9 | 1 | 1 | 0.0 | 27 |
| 10 | 1 | 1 | 0.0 | 27 |
| B. S. flexneri | | | | |
| Unspecified | 538 | | | |
| 1 unspecified | 139 | | | |
| 1A | 183 | 319 | 4.0 | 5 |
| 1B | 196 | 338 | 4.3 | 4 |
| 2 unspecified | 158 | | | |
| 2A | 479 | 771 | 9.7 | 2 |
| 2B | 89 | 143 | 1.8 | 8 |
| 3 unspecified | 184 | | | |
| 3A | 309 | 584 | 7.4 | 3 |
| 3B | 52 | 98 | 1.2 | 9 |
| 3C | 7 | 13 | 0.2 | 16 |
| 4 unspecified | 77 | | | |
| 4A | 81 | 195 | 2.5 | 7 |
| 4B | 4 | 10 | 0.1 | 18 |
| 5 | 26 | 33 | 0.4 | 12 |
| 6 | 205 | 258 | 3.3 | 6 |
| Variant X | 6 | 8 | 0.1 | 20.5 |
| C. S. boydii | | | | |
| Unspecified | 19 | | | |
| 1 | 8 | 9 | 0.1 | 19 |
| 2 | 52 | 62 | 0.8 | 10 |
| 4 | 7 | 8 | 0.1 | 20.5 |
| 5 | 13 | 15 | 0.2 | 15 |
| 9 | 1 | 1 | 0.0 | 27 |
| 10 | 20 | 24 | 0.3 | 13 |
| 11 | 1 | 1 | 0.0 | 27 |
| 12 | 1 | 1 | 0.0 | 27 |
| 14 | 4 | 5 | 0.1 | 22.5 |
| 15 | 1 | 1 | 0.0 | 27 |
| D. S. sonnei | 4866 | 4924 | 62.3 | 1 |
| Unknown | 93 | | | |
| Total | 7907 | 7908 | | |

The resulting distribution in the tables is called the "calculated number," and from this is derived a "calculated percent" for each serotype. These provide approximate indices of the relative frequencies of reporting Shigella serotypes in the United States. S. sonnei accounted for approximately 62.3% of all reported isolations. This is a decrease from 1974 and 1975 when S. sonnei constituted 75.8% and 64.5%, respectively, of all reported isolations (Figure 1). The next most common serotypes were S. flexneri 2a (9.7%), S. flexneri 3a (7.4%), S. flexneri 1b (4.3%), and S. flexneri 1a (4.0%). Only 10 S. dysenteriae 1 isolations were reported for 1976.

Table 3 shows the distribution of Shigella serotypes reported from mental institutions by state.

*Fig. 1* REPORTED ISOLATIONS OF SHIGELLA SPECIES, BY YEAR, UNITED STATES, 1964-1976




*INCLUDES ONLY PERSONS IN STATES AND TERRITORIES WITH PARTICIPATING REPORTING CENTERS

Table 3

Shigella Serotypes Isolated from Patients in Mental Institutions, By State, 1976*

| | S. dysenteriae 2 | S. flexneri unspecified | S. flexneri 1 unspecified | S. flexneri 1a | S. flexneri 2 unspecified | S. flexneri 2a | S. flexneri 2b | S. flexneri 3 unspecified | S. flexneri 3a | S. flexneri 3b | S. flexneri 4a | S. flexneri 6 | S. sonnei | Unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | 3 | | 1 | | | | | | | | | | 12 | | 16 |
| Florida | 1 | 4 | 1 | | 3 | | | 1 | | | | 10 | 1 | | 21 |
| Georgia | | | | | 1 | | | | | | | | | | 1 |
| Idaho | | | | | | | | | | | | | 14 | | 14 |
| Illinois | | | | 2 | | 14 | | | 14 | 1 | | | 29 | | 60 |
| Massachusetts | | | | | 6 | 129 | | | | | | | | | 135 |
| Michigan | | 1 | | | | | | 4 | 2 | 35 | | | 2 | | 44 |
| Minnesota | | | | | | | | | | | | | | 18 | 18 |
| Missouri | | | | | | | | | | | | | 13 | | 13 |
| New Jersey | | | 1 | | | | | 33 | | | | | 9 | | 43 |
| New York | | | | | | | | | | | | | 11 | | 11 |
| North Carolina | 1 | | | | | | | | | | | | 3 | | 4 |
| Pennsylvania | | 5 | | | | | | | | | | | | | 5 |
| Tennessee | | | | | | | | | | | | | 17 | | 17 |
| Texas | | | | 33 | | | 22 | | | | | | 2 | | 57 |
| Utah | | | | | 4 | | | | | | 1 | | | | 5 |
| Washington | | | | | | | | | | | | | 1 | | 1 |
| Total | 5 | 10 | 3 | 35 | 14 | 143 | 22 | 38 | 16 | 36 | 1 | 10 | 114 | 18 | 465 |

*California not included

3. Geographical and Seasonal Observations. There were more reported isolations of S. sonnei than S. flexneri in all but the following 12 states: Delaware (1:1),* Maine (2:2), Rhode Island (5:9), Nebraska (4:4), Montana (8:9), Nevada (3:4), North Dakota (3:4), South Dakota (0:26), Utah (49:49), Wyoming (0:1), Arizona (323:405), and Alaska (3:50). The seasonal distribution, which peaks in fall and winter, is depicted in Figure 2. Table 4 shows the general type of residence of the patients from whom Shigella was isolated and reported.

*Fig. 2* REPORTED ISOLATIONS OF SHIGELLA, BY QUARTER, UNITED STATES, 1964-1976

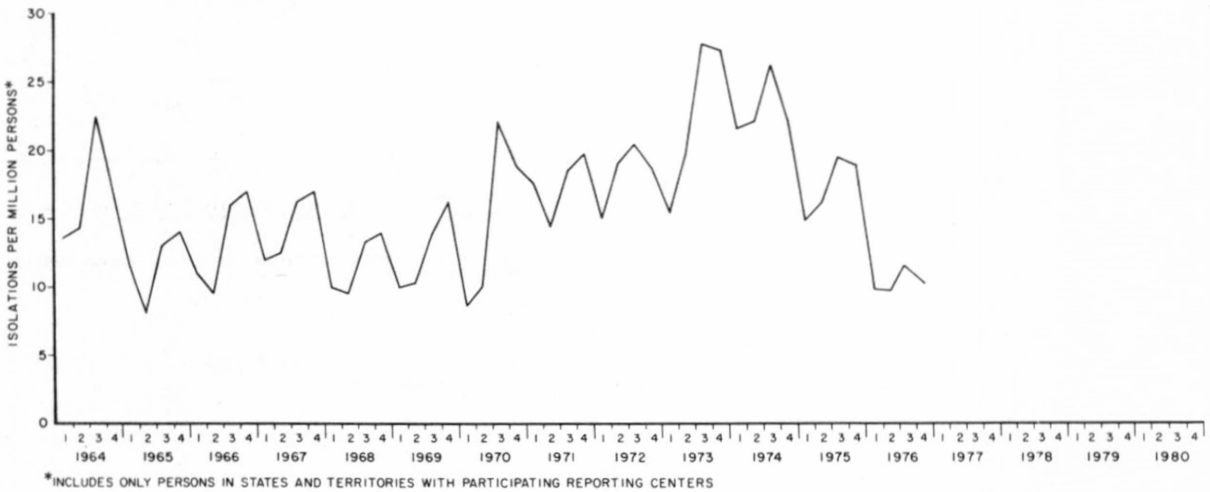



Table 4

Reported Isolations of Shigella, by Residence at Time of Onset, 1976*

| Source | Quarter 1st | 2nd | 3rd | 4th | Total | % of Subtotal |
|---|---|---|---|---|---|---|
| Mental Institutions | 162 | 81 | 131 | 91 | 465 | 13 |
| Indian Reservations | 10 | 11 | 23 | 9 | 53 | 2 |
| Other Residences | 660 | 738 | 848 | 735 | 2981 | 85 |
| Subtotal | 832 | 830 | 1002 | 835 | 3499 | -- |
| Residence unknown | 909 | 891 | 1448 | 1160 | 4408 | -- |
| Total | 1741 | 1721 | 2450 | 1995 | 7907 | -- |

*California not included

*The first figure in parenthesis is the number of reported isolates of S. sonnei, the second is the number of reported S. flexneri.

B. Nonhuman

For 1976, 35 isolations from nonhuman sources were reported, 32 of them from primates (Table 5).

Table 5

*Shigella* Serotypes Isolated from Non-Human Primates, By State, 1976*

| Serotype | Number | Source | State |
|---|---|---|---|
| *S. dysenteriae* 1 | 1 | chimpanzee | Illinois |
| *S. dysenteriae* 2 | 1 | rhesus monkey | Massachusetts |
| *S. flexneri* (unspec) | 1 | monkey | South Carolina |
| | 1 | chimpanzee | Texas |
| *S. flexenri* 1 (unspec) | 1 | monkey | Georgia |
| *S. flexneri* 2a | 1 | monkey | Illinois |
| | 1 | rhesus monkey | Massachusetts |
| | 1 | siamang gibbon | Texas |
| *S. flexneri* 3a | 1 | monkey | Louisiana |
| *S. flexneri* 3c | 3 | primate | Texas |
| *S. flexneri* 4 (unspec) | 13 | monkey | Georgia |
| *S. flexneri* 4a | 1 | primate | Texas |
| | 1 | rhesus monkey | Texas |
| *S. flexneri* 4b | 2 | rhesus monkey | Texas |
| *S. flexneri* 6 | 1 | monkey | Georgia |
| | 1 | monkey | Louisiana |
| | 1 | orangutan | Missouri |

*California not included

## III. DISCUSSION

In 1976, as for the third successive year, the rate of Shigella isolations for the United States has decreased. The total rate (all serotypes) and the rate for S. sonnei both peaked in 1973. California did not report any Shigella isolations to CDC in 1976, and although this accounts for part of the decrease in the total number of isolates, the number of isolates reported from the other 49 states also decreased.

If the California isolates are deleted from the 1975 totals, the decrease in reported Shigella isolations from 1975 to 1976 is actually only 28% (10,911 isolates in 1975 and 7,907 isolates in 1976). This 28% decrease in total reported Shigella isolates also reflects a decrease in the reported number of both S. sonnei and S. flexneri isolates. S. sonnei isolates decreased 39% from 7,950* in 1975 to 4,866 in 1976; S. flexneri isolates decreased 8% from 2,961* in 1975 to 2,733 in 1976. Although the decrease in S. flexneri isolates is much smaller than that observed for S. sonnei, this is still a reversal of the trend of increasing S. flexneri isolations seen previously in 1974 and 1975. The number of reported S. sonnei isolates continues to decline steadily.

The reasons for these changes are not clear. Of the states (18) that reported more than 200 total Shigella isolates in 1975, 6 reported between 25% and 50% fewer isolates in 1976 (Maryland, Michigan, Minnesota, New Jersey, New York, and Alabama) and 5 states reported a greater than 50% decrease in isolates in 1976 (Wisconsin, Utah, Washington, Florida, and Georgia). Of the 10 states that had a decrease of more than 200 isolates from 1974 to 1975, 7 reported further decreases of at least 25% in 1976.

In the 1975 Shigella Surveillance Report, it was suggested that these decreases might be a result of fewer cultures being done in areas of economic decline. However, the states with the largest decreases in number of isolates reported in 1975 and 1976 were apparently randomly distributed geographically and did not correlate with either low per capita income or high unemployment rates for those years.** It is more likely that the decreases in reported Shigella isolates are due to decreased reporting at the local and state levels; state health officials in 3 of the above 11 states noted that recent cessation of serotyping by their state laboratories had led to decreased reporting by local physicians and laboratories. While the decrease appears to be primarily a reporting phenomenon the possibility of an actual decrease in incidence to levels that prevailed prior to 1970 cannot be ruled out.

## IV. ABSTRACTS FROM THE RECENT LITERATURE ON SHIGELLOSIS

Shigellosis in custodial institutions. V. Effect of intervention with streptomycin-dependent Shigella sonnei. M. Levine, E. Gangarosa, W. Barrow, and C. Weiss. Am J Epidemiol 104:88-92, 1976

A double-blind controlled field trial of live, oral, streptomycin-dependent Shigella sonnei vaccine was begun in an institution with endemic S. sonnei disease. Considerable unexpected child-to-child transmission of the Shigella vaccine strains inadvertently caused the field trial to resemble a mass vaccination campaign. Although S. sonnei accounted for 90% of Shigella infections from 1968 to 1971 and three-fourths of the cases occurred in the 7 study cottages, S. sonnei disease disappeared following vaccination; epidemiologic features suggested a causal relationship. Clinical S. sonnei disease did not occur despite the detection by bacteriologic surveillance of carriers of virulent S. sonnei. Levels of hygiene remained compatible

* The 1975 totals are corrected for comparison with 1976 totals by deleting the 1975 California isolates.

**Figures on per capita income are from the Bureau of Economic Analysis, Department of Commerce, and the figures on unemployment are from the Bureau of Labor Statistics, Department of Labor.

with transmission of Shigella since 43 cases of S. flexneri 6 were seen. If the interpretation is correct, the disappearance of S. sonnei disease resulting from inadvertent "mass vaccination" and oral Shigella vaccines may prove useful for controlling endemic shigellosis in some institutions. Nevertheless, a properly designed controlled field trial, taking into account transmissibility of vaccine, in an institutional setting is necessary to substantiate the role of oral Shigella vaccines in control of institutional shigellosis.

Trimethoprim-sulfamethoxazole therapy for shigellosis. J. Nelson, H. Kusmiesz, L. Jackson, and E. Woodman. JAMA 235:1239-1243, 1976

Twenty-eight infants and children hospitalized for severe shigellosis were treated orally either with ampicillin trihydrate (100 mg/kg/day administered in divided doses every 6 hours) or with trimethoprim-sulfamethoxazole (trimethoprim, 10 mg; sulfamethoxazole, 50 mg/kg/day in divided doses every 12 hours) for 5 days. Four patients with ampicillin-resistant Shigella continued to have diarrhea and positive stool cultures during therapy. Patients with susceptible Shigella who were treated with ampicillin and all patients treated with trimethoprim-sulfamethoxazole responded promptly and comparably within an average of 1.6 and 1.7 days, respectively, until stool cultures were negative, and 3.1 and 2.9 days, respectively, until diarrhea stopped. Patients with ampicillin-resistant Shigella responded to treatment with trimethoprim-sulfamethoxazole. It was concluded that trimethoprim-sulfamethoxazole is the best currently available drug for treatment of shigellosis in areas where multiple antibiotic resistance of Shigella is common.

Diagnostic value of indirect hemagglutination in the seroepidemiology of Shigella infections. C. Patton, E. Gangarosa, J. Weissman, M. Merson, and G. Morris. J Clin Microbiol 3:143-148, 1976

To evaluate the usefulness of the indirect hemagglutination (IHA) test in the epidemiologic investigation of shigellosis, single serum specimens were tested from 50 patients with Shigella dysenteriae 1 (Shiga bacillus) infections, 103 asymptomatic contacts of these cases, 267 adult and 100 student controls, and serum specimens collected during 2 outbreaks caused by S. sonnei and 1 outbreak due to S. flexneri 6. In patients with S. dysenteriae 1; 74% demonstrated titers of $\geq$ 1:40, with 50% showing titers of $\geq$ 1:60; whereas in the controls 10.4% had titers of $\geq$ 1:40 and only 0.3% had titers of $\geq$ 1:60. IHA titers in serum specimens collected from patients with S. sonnei and S. flexneri 6 were too low to be considered diagnostic for individual patients, but were useful in analysis of group results. Groups of ill individuals yielded titers significantly higher than non-ill groups; however, titers from ill groups were usually less than 1:40. The IHA test for S. dysenteriae 1 antibodies serves as a valuable adjunct to the diagnosis of Shiga bacillus dysentery. In our laboratory, an IHA titer of 1:40 or 1:80 is a "borderline positive." Shiga bacillus dysentery is strongly indicated when IHA titers are $\geq$ 1:60.

TABLE I
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
FIRST QUARTER, 1976

| SEROTYPE | NORTHEAST | | | | | | | | | | | | | | | | | | | | | | | | | NORTHWEST | | | | | | | | | | | | | NORTH TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CONNECTICUT | DELAWARE | DISTRICT OF COLUMBIA | ILLINOIS | INDIANA | IOWA | KENTUCKY | MAINE | MARYLAND | MASSACHUSETTS | MICHIGAN | MINNESOTA | MISSOURI | NEW HAMPSHIRE | NEW JERSEY | NEW YORK--A | NEW YORK--BI | NEW YORK--C | OHIO | PENNSYLVANIA | RHODE ISLAND | VERMONT | VIRGINIA | WEST VIRGINIA | WISCONSIN | NORTHEAST TOTAL | COLORADO | IDAHO | KANSAS | MONTANA | NEBRASKA | NEVADA | NORTH DAKOTA | OREGON | SOUTH DAKOTA | UTAH | WASHINGTON | WYOMING | NORTHWEST TOTAL | |
| *S. DYSENTERIAE* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | | | | | | | | | | 1 | | | | | | 1 | | | | | | 2 | | | | | | | | | | | | 0 | 2 |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| 2 | | | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | | | | | | | | | | | | 0 | 1 |
| 3 | | | | 2 | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | 0 | 2 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| *S. FLEXNERI* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | 1 | 1 | | | 2 | | | | | 2 | 5 | 3 | | | 11 | | 15 | | 9 | | 1 | | | 2 | 52 | 19 | | 3 | 5 | | | | 11 | 2 | | | 1 | 41 | 93 |
| 1 Unspecified | | | | | | | | | | | 1 | | 2 | | | | | | | | | | | | 1 | 4 | | | | | | | | | | 2 | | | 2 | 6 |
| 1a | | | | 3 | | | | | | 1 | | | | | | | | | | | | | | | | 4 | | | | 1 | | | | | | 2 | | | 1 | 5 |
| 1b | 1 | | | | | | | | | 1 | 1 | 3 | | | | | | | | | | | | | | 6 | | | | | | | | | | | | | 0 | 6 |
| 2 Unspecified | | | | | | | 1 | | 15 | | 1 | | 4 | | 1 | | | | 2 | | | | | | 7 | 31 | | | | | | | | | | 4 | | | 4 | 35 |
| 2a | 1 | | | 10 | | | | | | 4 | | 5 | | | | | | | | | | | | | | 20 | | | | 2 | | | 1 | | | | | | 3 | 23 |
| 2b | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | 1 | | | | | | | | | | | 1 | 1 |
| 3 Unspecified | | | | | | | | | | 1 | 3 | | 1 | | 23 | | | 1 | | | | | | | | 29 | | | | | | | | | | 11 | | | 11 | 40 |
| 3a | 2 | | | 14 | | | | | | 9 | 5 | | | | | | | | | | | | | | | 30 | | | | | | | | | | | | | 0 | 30 |
| 3b | | | | 1 | | | | | | 2 | 10 | | | | | | | | | | | | | | | 13 | | | | | | | | | | | | | 0 | 13 |
| 3c | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | 0 | 2 |
| 4 Unspecified | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | 0 | 2 |
| 4a | 1 | | | 1 | | | | | | 1 | | | | | | | | | | | | | | | | 3 | | | | | | | | | | 1 | | | 1 | 4 |
| 4b | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| 6 | 1 | | | 2 | | | | | 1 | 1 | 2 | 1 | | | | | | | 1 | | | | | | 2 | 11 | | | | | | | | | | 1 | | | 1 | 12 |
| Variant X | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| TOTAL | 7 | 1 | 1 | 31 | 0 | 2 | 1 | 0 | 16 | 20 | 26 | 15 | 10 | 0 | 24 | 11 | 0 | 16 | 3 | 9 | 0 | 1 | 0 | 0 | 13 | 207 | 19 | 1 | 3 | 8 | 0 | 0 | 1 | 11 | 2 | 4 | 15 | 1 | 65 | 272 |
| *S. BOYDII* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | | | | | | | 1 | 1 | 1 | | 1 | 1 | | | | | | | | | | 5 | | | | | | | | | | | | | 0 | 5 |
| 2 | | | | 2 | | | | | | | 2 | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | | 0 | 4 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| 5 | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | 0 | 1 |
| 10 | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | 0 | 1 |
| TOTAL | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| *S. SONNEI* | 9 | | 38 | 77 | 30 | 7 | 3 | | 30 | 51 | 42 | 26 | 18 | 15 | 31 | 21 | | 42 | 20 | 7 | 1 | 4 | 6 | 1 | 5 | 484 | 12 | 10 | 3 | 8 | | 2 | 1 | 10 | | 26 | 44 | | 116 | 600 |
| Unknown | | | 3 | | | | | | | | | 21 | | | | | | | | | 1 | | | | | 25 | 10 | | | | | 1 | | | | | 1 | 12 | 37 |
| TOTAL | 16 | 1 | 42 | 112 | 30 | 9 | 4 | 0 | 46 | 71 | 71 | 65 | 30 | 16 | 56 | 33 | 0 | 58 | 23 | 17 | 2 | 5 | 6 | 1 | 18 | 732 | 41 | 11 | 6 | 16 | 0 | 3 | 2 | 21 | 2 | 30 | 59 | 2 | 193 | 925 |

TABLE I (Continued)
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
FIRST QUARTER, 1976

| SOUTHEAST | | | | | | | | | | SOUTHWEST | | | | | SOUTH TOTAL | OTHER | | | | | TOTAL | PERCENT OF TOTAL | PREVIOUS QUARTER | | SEROTYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALABAMA | ARKANSAS | FLORIDA | GEORGIA | LOUISIANA | MISSISSIPPI | NORTH CAROLINA | SOUTH CAROLINA | TENNESSEE | SOUTHEAST TOTAL | ARIZONA | NEW MEXICO | OKLAHOMA | TEXAS | SOUTHWEST TOTAL | | ALASKA | CALIFORNIA | HAWAII | VIRGIN ISLANDS | OTHER TOTAL | | | TOTAL | PERCENT OF TOTAL | |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. DYSENTERIAE* |
| | | | | | | | | | 0 | | | | 0 | 0 | 0 | | | | | 0 | 2 | 0.1 | 7 | 0.3 | Unspecified |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.1 | 1 | 0.0 | 1 |
| | | 3 | | | | | | | 3 | 1 | | | 1 | 2 | 5 | | | | | 0 | 6 | 0.3 | 10 | 0.4 | 2 |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 2 | 0.1 | 2 | 0.1 | 3 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.1 | 1 | 0.0 | 4 |
| **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **1** | **0** | **0** | **3** | **4** | **7** | **0** | **0** | **0** | **0** | **0** | **12** | **0.7** | **24** | **0.9** | **TOTAL** |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. FLEXNERI* |
| | 7 | | | | 1 | | | | 8 | | 14 | | 1 | 15 | 23 | | | | | 0 | 116 | 6.7 | 114 | 4.1 | Unspecified |
| 2 | | 1 | | | | | | | 3 | | 7 | | | 7 | 10 | | | | | 0 | 16 | 0.9 | 48 | 1.7 | 1 Unspecified |
| | | | | | | | | | 0 | 9 | | 44 | 53 | 53 | | | | | | 0 | 58 | 3.3 | 55 | 2.0 | 1a |
| | | | | | | | | | 0 | 9 | | | 1 | 10 | 10 | | | 1 | | 1 | 17 | 1.0 | 65 | 2.3 | 1b |
| 2 | | 3 | 2 | | | | 1 | | 8 | | | | | 0 | 8 | | | | | 0 | 43 | 2.5 | 63 | 2.3 | 2 Unspecified |
| | | | | 6 | | | | 1 | 7 | 11 | | 1 | 18 | 30 | 37 | | | 2 | | 2 | 62 | 3.6 | 96 | 3.5 | 2a |
| | | | | | | | | | 0 | 1 | | | 14 | 15 | 15 | | | 1 | | 1 | 17 | 1.0 | 35 | 1.3 | 2b |
| | | | 7 | | | | 1 | | 8 | | 3 | | 1 | 4 | 12 | | | 1 | | 1 | 53 | 3.0 | 34 | 1.2 | 3 Unspecified |
| | | | | | | | | | 0 | 7 | | | 30 | 37 | 37 | | | | | 0 | 67 | 3.8 | 54 | 1.9 | 3a |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 13 | 0.7 | 5 | 0.2 | 3b |
| | | | | | | | | 2 | 2 | | | | | 0 | 2 | | | | | 0 | 4 | 0.2 | 3 | 0.1 | 3c |
| | | | | | | | | 2 | 2 | | 1 | | | 1 | 3 | | | | | 0 | 5 | 0.3 | 17 | 0.6 | 4 Unspecified |
| | | | | 1 | | | | | 1 | 3 | | | 6 | 9 | 10 | | | 1 | | 1 | 15 | 0.9 | 26 | 0.9 | 4a |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.1 | 1 | 0.0 | 4b |
| | | | | | | | | | 0 | | | | 3 | 3 | 3 | | | 2 | | 2 | 5 | 0.3 | 7 | 0.3 | 5 |
| | | 3 | | | | | | 1 | 4 | 12 | 2 | | 10 | 24 | 28 | | | 1 | | 1 | 41 | 2.4 | 51 | 1.8 | 6 |
| 3 | | | | | | | | | 3 | | | | 1 | 1 | 4 | | | 1 | | 1 | 5 | 0.3 | | | Variant X |
| **7** | **7** | **7** | **9** | **7** | **1** | **2** | **0** | **6** | **46** | **52** | **27** | **1** | **130** | **210** | **256** | **0** | **0** | **10** | **0** | **10** | **538** | **30.9** | **675** | **24.3** | **TOTAL** |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. BOYDII* |
| | | | | | | | | | 0 | 1 | | | | 1 | 1 | | | | | 0 | 6 | 0.3 | 2 | 0.1 | Unspecified |
| | | | | | | | | | 0 | | 1 | | 5 | 6 | 6 | | | | | 0 | 10 | 0.6 | 34 | 1.2 | 2 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.1 | | | 4 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 2 | 0.1 | 2 | 0.1 | 5 |
| | | | | | | | | | 0 | | | | | | | | | | | 0 | 1 | 0.1 | | | 10 |
| **0** | **0** | | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **7** | **9** | **9** | **0** | **0** | **0** | **0** | **0** | **20** | **1.1** | **40** | **1.4** | **TOTAL** |
| 16 | 7 | 9 | 16 | 28 | 4 | 16 | 2 | 61 | 159 | 48 | 105 | 7 | 154 | 314 | 473 | | | 60 | | 60 | 1133 | 65.1 | 1989 | 71.6 | *S. SONNEI* |
| 1 | | | | | | | | | 1 | | | | | | 1 | | | | | | 38 | 2.2 | 50 | 1.8 | Unknown |
| **24** | **14** | **19** | **25** | **35** | **5** | **18** | **2** | **67** | **209** | **102** | **133** | **8** | **294** | **537** | **746** | **0** | **0** | **70** | **0** | **70** | **1741** | | **2778** | | **TOTAL** |

TABLE I
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
SECOND QUARTER, 1976

| SEROTYPE | NORTHEAST | | | | | | | | | | | | | | | | | | | | | | | | | | NORTHEAST TOTAL | NORTHWEST | | | | | | | | | | | | NORTHWEST TOTAL | NORTH TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CONNECTICUT | DELAWARE | DISTRICT OF COLUMBIA | ILLINOIS | INDIANA | IOWA | KENTUCKY | MAINE | MARYLAND | MASSACHUSETTS | MICHIGAN | MINNESOTA | MISSOURI | NEW HAMPSHIRE | NEW JERSEY | NEW YORK--A | NEW YORK--BI | NEW YORK--C | OHIO | PENNSYLVANIA | RHODE ISLAND | VERMONT | VIRGINIA | WEST VIRGINIA | WISCONSIN | | COLORADO | IDAHO | KANSAS | MONTANA | NEBRASKA | NEVADA | NORTH DAKOTA | OREGON | SOUTH DAKOTA | UTAH | WASHINGTON | WYOMING | | |
| *S. DYSENTERIAE* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | 1 | | | | | | | | | | | | | | | 1 | | | | | | | 2 | | | | | | | | | | | | | 0 | 2 |
| 1 | | | | 1 | | | | | | | | | | 1 | | | | | | | | | | 3 | 5 | | | | | | | | | | | | | 0 | 5 |
| 2 | | | | 1 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | 0 | 1 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | 1 | | 1 | 2 | | | | | | | | | | | | | 0 | 2 |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| TOTAL | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| *S. FLEXNERI* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | 5 | | 1 | | | 1 | 8 | 1 | 2 | 13 | | | | 9 | | 21 | | 4 | 4 | | 2 | | | 71 | 14 | 1 | | 1 | | 1 | | 5 | 4 | | | | 26 | 97 |
| 1 Unspecified | | | | | | | | | 1 | | | | 1 | | | | | | | | | | | | 3 | 5 | | | | | | | | | 8 | 4 | | 12 | 17 |
| 1a | | | | 5 | | | | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | | 0 | 5 |
| 1b | | | | 5 | | | | | | | 1 | | | | | | | | | | | | | | | 6 | | | | | | | | | | | | 0 | 6 |
| 2 Unspecified | | | | | | | | | 2 | 1 | 1 | | 1 | | 1 | | | | 1 | | | | | | 4 | 11 | | | | | | | | | 5 | 3 | | 8 | 19 |
| 2a | 3 | | | 17 | | | | | | 24 | 3 | | | | | | | | | | | | | | | 47 | | | | | | | | | | | | 0 | 47 |
| 2b | | | | 2 | | | | | | | | | | | | | | | | | | | | | | 2 | | 4 | | | | | | | | | | 4 | 6 |
| 3 Unspecified | | | | | | | | | | | 1 | | 3 | | 14 | | | 1 | 3 | 1 | | | | | 14 | 37 | | | 1 | | | | | | 3 | 12 | | 16 | 53 |
| 3a | 3 | | | 24 | | | | | | 5 | 4 | | | | | | | | | | | | | | | 36 | | | | | | | | | | | | 0 | 36 |
| 3b | | | | 1 | | | | | | | 8 | | | | | | | | | | | | | | | 9 | | | | | | | | | | | | 0 | 9 |
| 3c | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | 0 | 1 |
| 4 Unspecified | | | | | | | | | | | | | | | | | | | 3 | | | | | | 1 | 4 | | | | | | | | | | | | 0 | 4 |
| 4a | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 2 | | | | | | 4 | | | 6 | 7 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 1 | | 1 | 1 |
| 6 | | | | 3 | | | | | 1 | -2 | | | | | | | | | 1 | | | | | | 1 | 8 | | | | | | | | | | | | 0 | 8 |
| TOTAL | 8 | 0 | 5 | 57 | 1 | 0 | 0 | 1 | 12 | 33 | 20 | 13 | 5 | 0 | 15 | 9 | 0 | 22 | 8 | 5 | 4 | 0 | 2 | 0 | 23 | 243 | 14 | 5 | 3 | 1 | 0 | 1 | 0 | 5 | 4 | 20 | 20 | 0 | 73 | 316 |
| *S. BOYDII* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 4 | 1 | | | | | | | | | | | 5 | 5 |
| 2 | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | 0 | 4 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| 5 | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | | | | | | | | | 1 | | | 1 | 2 |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | 0 | 1 |
| 10 | | | | 2 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | 0 | 2 |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| TOTAL | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 14 |
| *S. SONNEI* | 8 | | 15 | 104 | 12 | 33 | 1 | | 35 | 48 | 70 | 10 | 11 | 3 | 20 | 10 | | 39 | 15 | 18 | 1 | | 5 | | 15 | 473 | 25 | 5 | 12 | | | | 1 | 11 | | 10 | 34 | | 98 | 571 |
| Unknown | | | 14 | | | | | | | | | | | | | | | 4 | | | | | | | | 18 | | | 1 | 1 | | | | | | | | 2 | 20 |
| TOTAL | 16 | 0 | 36 | 168 | 13 | 33 | 1 | 1 | 47 | 82 | 90 | 23 | 16 | 4 | 35 | 19 | 0 | 66 | 23 | 23 | 5 | 0 | 8 | 0 | 43 | 752 | 43 | 11 | 16 | 2 | 0 | 1 | 1 | 16 | 4 | 31 | 54 | 0 | 179 | 931 |

TABLE I (Continued)
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
SECOND QUARTER, 1976

| SOUTHEAST | | | | | | | | | | SOUTHWEST | | | | | SOUTH TOTAL | OTHER | | | | | TOTAL | PERCENT OF TOTAL | PREVIOUS QUARTER | | SEROTYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALABAMA | ARKANSAS | FLORIDA | GEORGIA | LOUISIANA | MISSISSIPPI | NORTH CAROLINA | SOUTH CAROLINA | TENNESSEE | SOUTHEAST TOTAL | ARIZONA | NEW MEXICO | OKLAHOMA | TEXAS | SOUTHWEST TOTAL | | ALASKA | CALIFORNIA | HAWAII | VIRGIN ISLANDS | OTHER TOTAL | | | TOTAL | PERCENT OF TOTAL | |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. DYSENTERIAE* |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 2 | 0.1 | 2 | 0.1 | Unspecified |
| | | | | | | | | | 0 | 1 | | | | 1 | 1 | | | | | 0 | 6 | 0.3 | 1 | 0.1 | 1 |
| 1 | | 2 | | | | 1 | | | 4 | | | | 2 | 2 | 6 | | | | | 0 | 7 | 0.4 | 6 | 0.3 | 2 |
| | | | | | | | | | 0 | 1 | | | | 1 | 1 | | | | | 0 | 3 | 0.2 | 2 | 0.1 | 3 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.1 | | | 9 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.1 | | | 10 |
| **1** | **0** | **2** | **0** | **0** | **0** | **1** | **0** | **0** | **4** | **2** | **0** | **0** | **4** | **6** | **10** | **0** | **0** | **0** | **0** | **0** | **20** | **1.2** | **12** | **0.7** | **TOTAL** |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. FLEXNERI* |
| | 9 | 3 | | | 3 | | 1 | | 16 | | 4 | 1 | 1 | 6 | 22 | | | | | 0 | 119 | 6.9 | 116 | 6.7 | Unspecified |
| | | 3 | | | | 1 | | | 4 | | 5 | | | 5 | 9 | | | | | 0 | 26 | 1.5 | 16 | 0.9 | 1 Unspecified |
| | | | | | | | | | 0 | | | | 26 | 26 | 26 | | | | | 0 | 31 | 1.8 | 58 | 3.3 | 1a |
| | | | | | | | | | 0 | 48 | | | | 48 | 48 | | | | | 0 | 54 | 3.1 | 17 | 1.0 | 1b |
| 1 | | 6 | | | | 1 | | | 8 | | 2 | | 2 | 4 | 12 | | | | | 0 | 31 | 1.8 | 43 | 2.5 | 2 Unspecified |
| | | | | 1 | | | | | 1 | 15 | | | 27 | 42 | 43 | | | 3 | | 3 | 93 | 5.4 | 62 | 3.6 | 2a |
| | | | | | | | | 2 | 2 | 1 | | | 14 | 15 | 17 | | | | | 0 | 23 | 1.3 | 17 | 1.0 | 2b |
| | | 2 | 2 | | | 1 | | | 5 | | 5 | | 1 | 6 | 11 | | | | | 0 | 64 | 3.7 | 53 | 3.0 | 3 Unspecified |
| | | | | | | | | | 0 | 17 | | | 34 | 51 | 51 | | | | | 0 | 87 | 5.1 | 67 | 3.8 | 3a |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 10 | 0.6 | 13 | 0.7 | 3b |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 1 | 0.1 | 4 | 0.2 | 3c |
| | | 3 | 1 | | | | | | 4 | | 8 | | | 8 | 12 | | | | | 0 | 16 | 0.9 | 5 | 0.3 | 4 Unspecified |
| | | | | 2 | | | | | 2 | 5 | | | 6 | 11 | 13 | | | 2 | | 2 | 22 | 1.3 | 15 | 0.9 | 4a |
| | | | | | | | | | 0 | | | | 3 | 3 | 3 | | | | | 0 | 4 | 0.2 | 5 | 0.3 | 5 |
| | | 2 | 1 | | | | | 3 | 6 | 6 | 4 | | 15 | 25 | 31 | | | | | 0 | 39 | 2.3 | 41 | 2.4 | 6 |
| **1** | **9** | **19** | **4** | **3** | **3** | **3** | **1** | **5** | **48** | **92** | **28** | **1** | **130** | **251** | **299** | **0** | **0** | **5** | **0** | **5** | **620** | **36.0** | **538** | **30.9** | **TOTAL** |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. BOYDII* |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 5 | 0.3 | 6 | 0.3 | Unspecified |
| | | | | | | | | | 0 | 4 | | | 2 | 6 | 6 | | | | | 0 | 10 | 0.6 | 10 | 0.6 | 2 |
| | | | | | | | | | 0 | 1 | | | | 1 | 1 | | | | | 0 | 1 | 0.1 | 1 | 0.1 | 4 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 3 | 0.2 | 2 | 0.1 | 5 |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 1 | 0.1 | | | 9 |
| | | | | | | | | | 0 | | | | 7 | 7 | 7 | | | | | 0 | 9 | 0.5 | 1 | 0.1 | 10 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.1 | | | 14 |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **5** | **0** | **0** | **11** | **16** | **16** | **0** | **0** | **0** | **0** | **0** | **30** | **1.7** | **20** | **1.1** | **TOTAL** |
| 27 | 2 | 11 | 22 | 46 | 4 | 11 | 4 | 48 | 175 | 36 | 48 | 8 | 149 | 241 | 416 | 2 | 1 | 40 | | 43 | 1030 | 59.8 | 1133 | 65.1 | *S. SONNEI* |
| | | | 1 | | | | | | 1 | | | | | 0 | 1 | | | | | 0 | 21 | 1.2 | 38 | 2.2 | Unknown |
| **29** | **11** | **32** | **27** | **49** | **7** | **15** | **5** | **53** | **228** | **135** | **76** | **9** | **294** | **514** | **742** | **2** | **1** | **45** | **0** | **48** | **1721** | | **1741** | | **TOTAL** |

TABLE I
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
THIRD QUARTER, 1976

| SEROTYPE | NORTHWEST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NORTHWEST | | | | | | | | | | | | | | | NORTH TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CONNECTICUT | DELAWARE | DISTRICT OF COLUMBIA | ILLINOIS | INDIANA | IOWA | KENTUCKY | MAINE | MARYLAND | MASSACHUSETTS | MICHIGAN | MINNESOTA | MISSOURI | NEW HAMPSHIRE | NEW JERSEY | NEW YORK--A | NEW YORK--BI | NEW YORK--C | OHIO | PENNSYLVANIA | RHODE ISLAND | VERMONT | VIRGINIA | WEST VIRGINIA | WISCONSIN | NORTHEAST TOTAL | COLORADO | IDAHO | KANSAS | MONTANA | NEBRASKA | NEVADA | NORTH DAKOTA | OREGON | SOUTH DAKOTA | UTAH | WASHINGTON | WYOMING | NORTHWEST TOTAL | |
| *S. DYSENTERIAE* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | | | | | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 0 | 1 |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 1 | | 1 | 1 |
| 2 | | | | 1 | | | | | | 1 | | | | | | | | | | | | | | 1 | 3 | 1 | | | | | | | | | 1 | 2 | | 4 | 7 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 3 | | | | | | | | | | | | 3 | 3 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | | 0 | 0 |
| **TOTAL** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 8 | 12 |
| *S. FLEXNERI* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | 15 | 1 | | | 1 | 4 | 3 | 19 | | | 3 | 6 | | 12 | | 12 | 2 | 1 | 3 | | | 82 | 6 | | 1 | | 1 | 2 | | 6 | 17 | 2 | | | 35 | 117 |
| 1 Unspecified | | | | | | | | | | | | | 1 | | | | | | 1 | | | | | | 4 | 6 | | | | | | | | | 7 | 5 | | 12 | 18 |
| 1a | | | | 10 | | | | | | | 1 | | | | | | | | | | | | | | | 11 | | | | | | | | | | | | 0 | 11 |
| 1b | | | | 2 | | | | | | 2 | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | 0 | 4 |
| 2 Unspecified | | | | | | | | | | 6 | | | 1 | | 3 | | | | | | | | | | 3 | 13 | | | | | | | | | 3 | 10 | | 13 | 26 |
| 2a | 2 | | | 31 | | | | | | 68 | 4 | | | | | | | | | | | | | | | 105 | | | | | | | | | | | | 0 | 105 |
| 2b | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | 2 | | 1 | | | | | | | | | | 1 | 3 |
| 3 Unspecified | | | | | | | | | | | | | 1 | | 6 | | | | 6 | | | | | | 9 | 22 | | 2 | | | | | | | | 5 | | 7 | 29 |
| 3a | 1 | | | 19 | | | | | | 8 | 6 | | | | | | | | | | | | | | | 34 | | | | | | | | | | | | 0 | 34 |
| 3b | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| 3c | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| 4 Unspecified | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | 1 | 2 |
| 4a | 1 | | | 2 | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | 1 | | | 1 | 4 |
| 4b | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| 5 | 1 | | | 3 | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | 0 | 4 |
| 6 | | | | 7 | | | | | | 2 | 6 | | 1 | 1 | 2 | | | | | | | | | | 2 | 21 | | | 1 | | | | | | 1 | | | 2 | 23 |
| Variant X | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| **TOTAL** | 6 | 0 | 0 | 75 | 15 | 1 | 0 | 0 | 1 | 90 | 21 | 19 | 4 | 1 | 14 | 6 | 0 | 12 | 7 | 12 | 2 | 1 | 3 | 0 | 18 | 308 | 6 | 3 | 2 | 0 | 1 | 2 | 0 | 6 | 17 | 14 | 21 | 0 | 72 | 380 |
| *S. BOYDII* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | | | | | | | | | | | | | | | | | | | | 1 | | 1 | 1 | | | | | | | | | | | | 1 | 2 |
| 1 | | | | 2 | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | 0 | 2 |
| 2 | 1 | | | 2 | | | | | | | | | | | | | | | | | | | | | | 3 | 1 | 1 | | | | | | | | | | 2 | 5 |
| 4 | | | | 2 | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | 0 | 2 |
| 5 | | | | 1 | | | | | | 1 | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | 0 | 2 |
| 10 | | | | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | 0 | 1 |
| 12 | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | 0 | 1 |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| **TOTAL** | 1 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15 |
| *S. SONNEI* | 17 | 1 | | 169 | 20 | 6 | 4 | | 47 | 49 | 40 | 37 | 8 | 1 | 31 | 19 | | 42 | 2 | 29 | 2 | 2 | 14 | 1 | 35 | 576 | 59 | | 16 | | | | | 1 | | 8 | 45 | | 129 | 705 |
| Unknown | | | | | | 3 | | | | 1 | | 9 | | | | | | 6 | | | | | | | 2 | 21 | | | | | | 1 | | | | | 1 | 2 | 23 |
| **TOTAL** | 24 | 1 | 0 | 253 | 35 | 10 | 4 | 0 | 49 | 143 | 61 | 65 | 12 | 2 | 45 | 25 | 0 | 60 | 9 | 41 | 4 | 3 | 17 | 2 | 56 | 921 | 71 | 4 | 18 | 0 | 1 | 3 | 0 | 7 | 17 | 23 | 69 | 1 | 214 | 1135 |

TABLE I (Continued)
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
THIRD QUARTER, 1976

| SOUTHEAST | | | | | | | | | | SOUTHWEST | | | | | SOUTH TOTAL | OTHER | | | | | TOTAL | PERCENT OF TOTAL | PREVIOUS QUARTER | | SEROTYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALABAMA | ARKANSAS | FLORIDA | GEORGIA | LOUISIANA | MISSISSIPPI | NORTH CAROLINA | SOUTH CAROLINA | TENNESSEE | SOUTHEAST TOTAL | ARIZONA | NEW MEXICO | OKLAHOMA | TEXAS | SOUTHWEST TOTAL | | ALASKA | CALIFORNIA | HAWAII | VIRGIN ISLANDS | OTHER TOTAL | | | TOTAL | PERCENT OF TOTAL | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. DYSENTERIAE* |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 1 | 0.0 | 2 | 0.1 | Unspecified |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 2 | 0.1 | 6 | 0.3 | 1 |
| 4 | | 5 | | | | 1 | | | 10 | | | | 2 | 2 | 12 | | | | | 0 | 19 | 0.8 | 7 | 0.4 | 2 |
| | | | | | | | | | 0 | 1 | 1 | | 3 | 5 | 5 | | | | | 0 | 8 | 0.3 | 3 | 0.2 | 3 |
| | | | | | | | | | 0 | 1 | | | 1 | 2 | 2 | | | | | 0 | 2 | 0.1 | | | 4 |
| | | | | | | 1 | | | 1 | | | | | 0 | 1 | | | | | 0 | 1 | 0.0 | | | 6 |
| 4 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 11 | 2 | 1 | 0 | 7 | 10 | 21 | 0 | 0 | 0 | 0 | 0 | 33 | 1.3 | 20 | 1.2 | TOTAL |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. FLEXNERI* |
| | 3 | 4 | | 1 | 5 | | 1 | | 14 | | 10 | | | 10 | 24 | 12 | | | | 12 | 153 | 6.2 | 119 | 6.9 | Unspecified |
| 1 | | 3 | 1 | | | | | | 5 | | 31 | | | 31 | 36 | | | | | 0 | 54 | 2.2 | 26 | 1.5 | 1 Unspecified |
| | | 3 | | | | | | 1 | 4 | 9 | | | 34 | 43 | 47 | | | | | 0 | 58 | 2.4 | 31 | 1.8 | 1a |
| | | | | 1 | | | | | 1 | 74 | | | 7 | 81 | 82 | | | | | 0 | 86 | 3.5 | 54 | 3.1 | 1b |
| 3 | | 1 | 2 | 2 | | 2 | | | 10 | | 16 | | 1 | 17 | 27 | | | | | 0 | 53 | 2.2 | 31 | 1.8 | 2 Unspecified |
| | | | | 12 | | | | 6 | 18 | 23 | | | 22 | 45 | 63 | 25 | | 7 | | 32 | 200 | 8.2 | 93 | 5.4 | 2a |
| | | | | | | | | 2 | 2 | 6 | | | 30 | 36 | 38 | | | | | 0 | 41 | 1.7 | 23 | 1.3 | 2b |
| | | 2 | 4 | | | | | | 6 | | 5 | | 1 | 6 | 12 | | | 1 | | 1 | 42 | 1.7 | 64 | 3.7 | 3 Unspecified |
| | | | | 1 | | | | 1 | 2 | 23 | | | 24 | 47 | 49 | | | | | 0 | 83 | 3.4 | 87 | 5.1 | 3a |
| | | | | | | | | | 0 | 2 | | | | 2 | 2 | | | | | 0 | 2 | 0.1 | 10 | 0.6 | 3b |
| | | | | | | | | 1 | 1 | | | | 1 | 1 | 2 | | | | | 0 | 2 | 0.1 | 1 | 0.1 | 3c |
| | | | 1 | | | | | | 1 | | 20 | | | 20 | 21 | | | 1 | | 1 | 24 | 1.0 | 16 | 0.9 | 4 Unspecified |
| | | | | 1 | | | | | 1 | 5 | | 1 | 11 | 17 | 18 | | | 1 | | 1 | 23 | 0.9 | 22 | 1.3 | 4a |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.0 | | | 4b |
| | | | | | | | | | 0 | 1 | | | 7 | 8 | 8 | | | | | 0 | 12 | 0.5 | 4 | 0.2 | 5 |
| | | 4 | | 1 | | | | 1 | 6 | 17 | 11 | | 16 | 44 | 50 | | | | | 0 | 73 | 3.0 | 39 | 2.3 | 6 |
| 1 | | | | | | | | | 1 | | | | | 0 | 1 | | | | | 0 | 1 | 0.0 | | | Variant X |
| 5 | 3 | 17 | 8 | 19 | 5 | 2 | 1 | 12 | 72 | 160 | 93 | 1 | 155 | 409 | 481 | 37 | 0 | 10 | 0 | 47 | 908 | 37.1 | 620 | 36.0 | TOTAL |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. BOYDII* |
| | | | | | | | | | 0 | | 1 | | | 1 | 1 | | | | | 0 | 3 | 0.1 | 5 | 0.3 | Unspecified |
| | | | | | | | | | 0 | | | | 4 | 4 | 4 | | | | | 0 | 6 | 0.2 | | | 1 |
| | | | | 1 | | | | | 1 | 6 | 5 | | 6 | 17 | 18 | | | | | 0 | 23 | 0.9 | 10 | 0.6 | 2 |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 2 | 0.1 | 1 | 0.1 | 4 |
| | | | | | | | | | 0 | | 3 | | 1 | 4 | 4 | | | | | 0 | 6 | 0.2 | 3 | 0.2 | 5 |
| | | | | | | | | | 0 | 2 | | | 4 | 6 | 6 | | | | | 0 | 7 | 0.3 | 9 | 0.5 | 10 |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 1 | 0.0 | | | 12 |
| | | | | | | | | | 0 | 1 | | | 2 | 3 | 3 | | | | | 0 | 3 | 0.1 | 1 | 0.1 | 14 |
| | | | | | | | | | 0 | | | | 1 | 1 | 1 | | | | | 0 | 1 | 0.0 | | | 15 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 9 | 9 | 0 | 18 | 36 | 37 | 0 | 0 | 0 | 0 | 0 | 52 | 2.1 | 30 | 1.7 | TOTAL |
| 16 | 14 | 26 | 14 | 52 | 8 | 16 | 16 | 57 | 219 | 139 | 86 | 5 | 243 | 473 | 692 | | | 35 | | 35 | 1432 | 58.4 | 1030 | 59.8 | *S. SONNEI* |
| | | 1 | | | | | | | 1 | | 1 | | | 1 | 2 | | | | | | 25 | 1.0 | 21 | 1.2 | Unknown |
| 25 | 17 | 49 | 22 | 72 | 13 | 20 | 17 | 69 | 304 | 310 | 190 | 6 | 423 | 929 | 1233 | 37 | 0 | 45 | 0 | 82 | 2450 | | 1721 | | TOTAL |

TABLE I
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
FOURTH QUARTER, 1976

| SEROTYPE | NORTHEAST | | | | | | | | | | | | | | | | | | | | | | | | | | NORTHWEST | | | | | | | | | | | | | NORTH TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CONNECTICUT | DELAWARE | DISTRICT OF COLUMBIA | ILLINOIS | INDIANA | IOWA | KENTUCKY | MAINE | MARYLAND | MASSACHUSETTS | MICHIGAN | MINNESOTA | MISSOURI | NEW HAMPSHIRE | NEW JERSEY | NEW YORK–A | NEW YORK–BI | NEW YORK–C | OHIO | PENNSYLVANIA | RHODE ISLAND | VERMONT | VIRGINIA | WEST VIRGINIA | WISCONSIN | NORTHEAST TOTAL | COLORADO | IDAHO | KANSAS | MONTANA | NEBRASKA | NEVADA | NORTH DAKOTA | OREGON | SOUTH DAKOTA | UTAH | WASHINGTON | WYOMING | NORTHWEST TOTAL | |
| *S. DYSENTERIAE* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | 1 | | | | | | | 4 | | | | | | | | | 3 | | 1 | | | 1 | | | 9 | | | | | | | | | | | | 0 | 9 |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | 0 | 0 |
| 2 | | | | 2 | | | | | | | | | | | | | | | | 1 | | | | | | 3 | | | | | | | | | | 1 | 1 | 4 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | 1 | 1 | 1 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 |
| TOTAL | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 14 |
| *S. FLEXNERI* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | 17 | 5 | | 1 | 1 | | 2 | 12 | | | | | | 22 | | 4 | 3 | | 1 | | 1 | 69 | 36 | | 1 | | 3 | | | 1 | 3 | | | 44 | 113 |
| 1 Unspecified | | | | | | | | | | | | | | | 2 | | | | 1 | 1 | | | | | 3 | 7 | | | | | | | | | 4 | 3 | 7 | 14 |
| 1a | | | | 7 | | | | | | 1 | | | | | | | | | | 1 | | | | | | 9 | | | | | | | | | | | 0 | 9 |
| 1b | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | 4 | | | 2 | | | | | | | | 2 | 6 |
| 2 Unspecified | | | | | | | 2 | | | | | | | | 1 | | | | 1 | 1 | | | | | 4 | 9 | | | | | | | | | 2 | 8 | 10 | 19 |
| 2a | 12 | | | 14 | | | | | | 47 | 6 | | | | | | | | | 5 | | | | | | 84 | | | 1 | | | | | | | | 1 | 85 |
| 2b | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | | | | | | | | | | | 0 | 1 |
| 3 Unspecified | | | | | | | | | | | | | | | | | | 1 | 2 | 2 | | | | | 5 | 10 | | 4 | | | | | | | 1 | 3 | 8 | 18 |
| 3a | 4 | | | 14 | | | | | | | 8 | | | | | | | | | 1 | | | | | | 27 | | | | | | | | | | | 0 | 27 |
| 3b | | | | | | | | | | | 23 | | | | | | | | | | | | | | | 23 | | | | | | | | | | | 0 | 23 |
| 4 Unspecified | | | | | | | | | | | | | 2 | | 1 | | | | | | | | | | | 3 | | | | | | | 3 | | | 2 | 5 | 8 |
| 4a | | | | 3 | | | | | | 1 | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | 0 | 4 |
| 4b | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 |
| 5 | | | | | | | | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | | | | | | 1 | 1 | 2 |
| 6 | 1 | | | 3 | | | | | | | | | 1 | | 1 | | | | 1 | | | | 1 | | 1 | 9 | | 1 | | | | | | | 4 | 1 | 6 | 15 |
| TOTAL | 17 | 0 | 0 | 41 | 17 | 5 | 2 | 1 | 1 | 50 | 43 | 12 | 3 | 0 | 6 | 0 | 0 | 23 | 5 | 15 | 3 | 0 | 2 | 0 | 14 | 260 | 36 | 5 | 4 | 0 | 3 | 0 | 3 | 1 | 3 | 11 | 18 | 0 | 84 | 344 |
| *S. BOYDII* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unspecified | | | | | | | | | | | | | | | | | | 2 | | | | | | | 1 | 3 | | 1 | | | | | | | | | | 1 | 4 |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 4 | | | | | | | | | | 4 | 4 |
| 4 | | | | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | 0 | 1 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 |
| *S. SONNEI* | 16 | | | 145 | 23 | 3 | 5 | 2 | 38 | 21 | 33 | 27 | 28 | | 30 | | | 71 | 12 | 12 | 1 | 1 | 2 | | 21 | 491 | 82 | 4 | 7 | | 4 | 7 | 1 | 3 | | 5 | 21 | | 134 | 625 |
| Unknown | | | | | | | | | | | | 1 | | | 2 | | | 2 | | | | | | | 2 | 7 | | | | | | 1 | | | | | | | 1 | 8 |
| TOTAL | 33 | 1 | 0 | 189 | 40 | 8 | 7 | 3 | 43 | 71 | 76 | 40 | 31 | 0 | 38 | 0 | 0 | 101 | 17 | 28 | 4 | 1 | 5 | 0 | 38 | 774 | 122 | 10 | 11 | 0 | 7 | 8 | 4 | 4 | 3 | 16 | 41 | 0 | 226 | 1000 |

TABLE I (Continued)
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
FOURTH QUARTER, 1976

| SOUTHEAST | | | | | | | | | | SOUTHWEST | | | | | SOUTH TOTAL | OTHER | | | | | TOTAL | PERCENT OF TOTAL | PREVIOUS QUARTER | | SEROTYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALABAMA | ARKANSAS | FLORIDA | GEORGIA | LOUISIANA | MISSISSIPPI | NORTH CAROLINA | SOUTH CAROLINA | TENNESSEE | SOUTHEAST TOTAL | ARIZONA | NEW MEXICO | OKLAHOMA | TEXAS | SOUTHWEST TOTAL | | ALASKA | CALIFORNIA | HAWAII | VIRGIN ISLANDS | OTHER TOTAL | | | TOTAL | PERCENT OF TOTAL | | |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | | | 0 | 9 | 0.5 | 1 | 0.0 | *S. DYSENTERIAE* Unspecified |
| | | 1 | | | | | | | 1 | | | | | 0 | 1 | | | | | 0 | 1 | 0.1 | 2 | 0.1 | 1 |
| | | | | | | | | | 0 | | | | 3 | 3 | 3 | | | | | 0 | 7 | 0.4 | 19 | 0.8 | 2 |
| | | | | | | 1 | | | 1 | 1 | | | 2 | 3 | 4 | | | | | 0 | 5 | 0.3 | 8 | 0.3 | 3 |
| | | | | | | | | | 0 | 1 | | | | 1 | 1 | | | | | 0 | 1 | 0.1 | 2 | 0.1 | 4 |
| **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **2** | **2** | **0** | **0** | **5** | **7** | **9** | **0** | **0** | **0** | | **0** | **23** | **1.2** | **33** | **1.3** | **TOTAL** |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. FLEXNERI* |
| | 2 | | | 1 | 6 | | | | 9 | 11 | 3 | | 4 | 18 | 27 | 10 | | | | 10 | 150 | 7.5 | 153 | 6.2 | Unspecified |
| | | | 2 | | | 2 | | | 4 | | 25 | | | 25 | 29 | | | | | 0 | 43 | 2.2 | 54 | 2.2 | 1 Unspecified |
| | | | | | | | | | 0 | 17 | | | 10 | 27 | 27 | | | | | 0 | 36 | 1.8 | 58 | 2.4 | 1a |
| | | | | | | | | 3 | 3 | 30 | | | | 30 | 33 | | | | | 0 | 39 | 2.0 | 86 | 3.5 | 1b |
| | | 2 | 2 | | | 2 | | | 6 | | 6 | | | 6 | 12 | | | | | 0 | 31 | 1.6 | 53 | 2.2 | 2 Unspecified |
| | | | | 5 | | | | | 5 | 8 | | | 20 | 28 | 33 | 2 | | 4 | | 6 | 124 | 6.2 | 200 | 8.2 | 2a |
| | | | | | | | | 2 | 2 | | | | 5 | 5 | 7 | | | | | 0 | 8 | 0.4 | 41 | 1.7 | 2b |
| | | | 2 | | | | | | 2 | | 5 | | | 5 | 7 | | | | | 0 | 25 | 1.3 | 42 | 1.7 | 3 Unspecified |
| | | | | 4 | | | | 5 | 9 | 16 | | | 19 | 35 | 44 | 1 | | | | 1 | 72 | 3.6 | 83 | 3.4 | 3a |
| | | | | | | | | | 0 | | | | 4 | 4 | 4 | | | | | 0 | 27 | 1.4 | 2 | 0.1 | 3b |
| | | | | | | | | | 0 | | 23 | | | 23 | 23 | | | 1 | | 1 | 32 | 1.6 | 24 | 1.0 | 4 Unspecified |
| | | | | 1 | | | | | 1 | 11 | | | 2 | 13 | 14 | | | 3 | | 3 | 21 | 1.1 | 23 | 0.9 | 4a |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | 2 | | 2 | 2 | 0.1 | 1 | 0.0 | 4b |
| | | | | | | | | | 0 | | 1 | | 2 | 3 | 3 | | | | | 0 | 5 | 2.5 | 12 | 0.5 | 5 |
| | | 7 | | | | | | | 7 | 8 | 4 | | 18 | 30 | 37 | | | | | 0 | 52 | 2.6 | 73 | 3.0 | 6 |
| **0** | **2** | **9** | **6** | **11** | **6** | **4** | **0** | **10** | **48** | **101** | **67** | **0** | **84** | **252** | **300** | **13** | **0** | **10** | | **23** | **667** | **33.4** | **908** | **37.1** | **TOTAL** |
| | | | | | | | | | | | | | | | | | | | | | | | | | *S. BOYDII* |
| | | | | | | | | | 0 | | 1 | | | 1 | 1 | | | | | 0 | 5 | 0.3 | 3 | 0.1 | Unspecified |
| | | | | | | | | 1 | 1 | | | | 1 | 1 | 2 | | | | | 0 | 2 | 0.1 | 6 | 0.2 | 1 |
| | | | | | | | | | 0 | 1 | | | 4 | 5 | 5 | | | | | 0 | 9 | 0.5 | 23 | 0.9 | 2 |
| | | | | 1 | | | | | 1 | 1 | | | | 1 | 2 | | | | | 0 | 3 | 0.2 | 2 | 0.1 | 4 |
| | | | | | | | | | 0 | 1 | 1 | | | 2 | 2 | | | | | 0 | 2 | 0.1 | 6 | 0.2 | 5 |
| | | | | | | | | | 0 | 2 | | | 1 | 3 | 3 | | | | | 0 | 3 | 0.2 | 7 | 0.3 | 10 |
| | | | | | | | | | 0 | | | | | 0 | 0 | | | 1 | | 1 | 1 | 0.1 | | | 11 |
| **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **2** | **5** | **2** | **0** | **6** | **13** | **15** | **0** | **0** | **1** | | **1** | **25** | **1.3** | **52** | **2.1** | **TOTAL** |
| 36 | 11 | 18 | 63 | 89 | 13 | 23 | 3 | 52 | 308 | 100 | 68 | 3 | 148 | 319 | 627 | 1 | 8 | 10 | | 19 | 1271 | 63.7 | 1432 | 58.4 | *S. SONNEI* |
| | | | | | | | | | 0 | 1 | | | | 1 | 1 | | | | | 0 | 9 | 0.5 | 25 | 1.0 | Unknown |
| **36** | **13** | **28** | **69** | **101** | **19** | **28** | **3** | **63** | **360** | **209** | **137** | **3** | **243** | **592** | **952** | **14** | **8** | **21** | | **43** | **1995** | | **2450** | | **TOTAL** |



* U.S. GOVERNMENT PRINTING OFFICE: 1977--740-265/7076 Region No. 4

## STATE EPIDEMIOLOGISTS AND STATE LABORATORY DIRECTORS

The State Epidemiologists are the key to all disease surveillance activities. They are responsible for collecting, interpreting, and transmitting data and epidemiologic information from their individual states. Their contributions to this report are gratefully acknowledged. In addition, valuable contributions are made by State Laboratory Directors; we are indebted to them for their valuable support.

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| New Hampshire | Vladas Kaupas, MD | Robert A Miliner, DrPH |
| New Jersey | Ronald Altman, MD | John J Nelson, MPH |
| New Mexico | Jonathan M Mann, MD | Aaron Bond, MPH |
| New York State | Donald O Lyman, MD | David Axelrod, MD |
| New York City | John S Marr, MD | Bernard Davidow, PhD |
| North Carolina | Martin P Hines, DVM | Mildred A Kerbaugh |
| North Dakota | Kenneth Mosser | C Patton Steele, BS |
| Ohio | Thomas J Halpin, MD | Charles C Croft, ScD |
| Oklahoma | Patrick M Morgan, DVM, DrPH | William R Schmieding, PhD |
| Oregon | John A Googins, MD | William Murphey, PhD |
| Pennsylvania | William E Parkin, DVM | Vern Pidcoe, DrPH |
| Puerto Rico | Henry Negron, MD | Jose L Villamil |
| Rhode Island | Gerald A Faich, MD | Raymond G Lundgren, PhD |
| South Carolina | Richard L Parker, DVM | Arthur F DiSalvo, MD |
| South Dakota | James D Corning, BA, Acting | A Richard Melton, DrPH |
| Tennessee | Robert H Hutcheson, Jr, MD | M Sam Sudman, DrPH |
| Texas | Charles R Webb, Jr, MD | Charles Sweet, DrPh |
| Utah | Taira Fukushima, MD | James O Mason, MD |
| Vermont | Richard L Vogt, MD, Acting | Dymitry Pomer, DVM |
| Virginia | Grayson B Miller, Jr, MD | Frank W Lambert, PhD |
| Washington | Jack Allard, PhD* | Jack Allard, PhD* |
| West Virginia | William L Cooke, MD | John W Brough, DrPH |
| Wisconsin | H Grant Skinner, MD | S L Inhorn, MD |
| Wyoming | Herman S Parish, MD | Donald T Lee, DrPH |

*Dual assignment

9/29/77