

Waterborne Giardiasis – California, Colorado, Oregon, Pennsylvania 3083

Several recent reports exemplify the increasing frequency with which *Giardia* is being implicated as the cause of waterborne outbreaks of diarrhea. These and past outbreaks have several features in common, namely that they occur in communities in which 1) surface water (streams, rivers, lakes), not well water, is used; 2) chlorination is the principal method for disinfecting water; and 3) water treatment does not include filtration, or existing filters have structural or operational defects.

California: From January 1976 through September 1979, 42 cases of giardiasis were confirmed in Plumas County residents or vacationers. Preliminary investigation disclosed that most had occurred in the spring and summer months and were predominantly in persons from the town of Graeagle.

In September 1979, a survey was undertaken of 378 subscribers of the Graeagle Water Company and 200 randomly selected control households in a neighboring town. The Graeagle Water Company employs a surface water source which is chlorinated but unfiltered, whereas the water supply of the control town uses well water. Responses from the Graeagle subscribers reported on a total of 463 people. Of these, 79 (17%)—including 19 previously confirmed cases—gave histories suggestive of giardiasis (that is, diarrhea of  $\geq$ 5 days duration or recurrent diarrhea accompanied by 2 or more of the following symptoms—abdominal pain, fever, bloating, nausea, vomiting, and weight loss). In contrast, 3% of the residents in the control town had an illness compatible with *Giardia*. Among confirmed cases, exposure to the Graeagle water system was the only common risk factor identified. Attempts by the California Department of Health Services to isolate *G. lamblia* cysts from Graeagle water samples were unsuccessful. However, 2 of 3 beavers trapped in the Graeagle watershed were found to be infected with the organism. An ordinance to boil all water was put into effect in Plumas County until the water could be filtered.

**Colorado:** During August 1979, giardiasis-like illness was reported from both residents of and visitors to Estes Park, Colorado. Sixteen of 28 stool specimens from residents examined by the Colorado State Department of Health were found to be positive for *G. lamblia*. During the month of August 1978, 3 of 17 (17%) stools examined were found to be positive for *Giardia*.

Estes Park is a resort town and receives water from the Fall River plant, which utilizes surface water that is both filtered and chlorinated. A study of Estes Park residents supplied with water from the Fall River plant and a control population supplied with water from other Estes water plants revealed no difference in the attack rate for giardiasis, defined as any diarrheal illness persisting for 7 days or more during the study period (August 1-September 19, 1979). However, a study of 23 nonresidents of Estes Park who visited the

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town during the study period showed that 7 of 23 (31%) were ill; 7 of 11 (63%) people remembered drinking water at establishments supplied by the Fall River plant, whereas none of the 12 who did not drink water from establishments supplied by the Fall River plant became ill (P < .01, Fisher's exact test). Eight of the 13 high-volume water-sampling filters placed at different locations in Estes Park and Denver were positive for *G. lamblia* cysts. Positive samples were obtained from water collected before and after treatment at the Fall River plant. The plant has been closed and will not be reopened until new chemical and filtration measures are instituted.

**Oregon:** Giardiasis outbreaks occurred in 2 communities in Oregon in 1979. The first outbreak was in a mountain resort community at Zig Zag in September 1979. Epidemiologic investigation showed that 66 of 690 individuals (10%) reported intestinal symptoms consistent with giardiasis. Sixteen of 66 (24%) were treated for giardiasis, and 8 of 16 were found to have *Giardia* cysts in their stools. A study of the water system showed *Giardia* cysts in beaver feces collected from the watershed. *Giardia* cysts were also found at the distribution system at the chlorinator station.

The second outbreak occurred in Government Camp in November. Several cases of giardiasis were reported among persons who drank the chlorinated, but unfiltered, water in this resort community. An epidemiologic investigation of permanent residents of Government Camp showed that 55 of 95 (58%) had gastrointestinal illness during October-November 1979; 20 of 95 (21%) had diarrhea, gas, or cramps lasting 7 days or more. Seven of 95 (7%) had laboratory-confirmed giardiasis. A study of a control community using a different water source showed that 50 of 151 (33%) had gastrointestinal illness during the study period, with 12 of 151 (8%) having symptoms suggestive of giardiasis. None were found to have *Giardia* in their stools. The differences between these 2 communities were statistically significant. *Giardia lamblia* cysts were identified in beaver feces collected from the stream above the intake of the Government Camp water system. An ordinance to boil water was issued.

Pennsylvania: During the 8-week period October 20-December 15, 1979, 407 cases of giardiasis were confirmed among the residents of Bradford. Epidemiologic investigation showed that the illness had begun as early as July, but cases peaked in September and October. The cases were widespread, and geographic clustering was not evident.

The water supply of Bradford is disinfected by chlorine gas; the water is not filtered. A marked turbidity problem was reported in July and August; it was attributed to a prolonged rainy season. Intermittently, high coliform counts and high turbidity levels were measured in the finished water. *Giardia* cysts were recovered from both raw and treated water. *Giardia* was also identified in the stool of a beaver trapped in 1 of the water supply reservoirs.

A random community questionnaire survey of Bradford showed that 5.4% had giardiasis-like illness (diarrhea for  $\geq 10$  days) vs. only 0.6% of Warren County residents who used well water as their source ( $X^2 = 9.58$ , P $\leq$ .002). During July-October 1979, 25% of Bradford residents had diarrheal illness compared to 10% of Warren County residents ( $X^2 = 19.88$ , P $\leq$ .0001). A stool survey confirmed *Giardia* infection in 17 (16%) of 106 Bradford residents compared to none of 40 from the control county (P $\leq$ .003, Fisher's exact test). To control the outbreak the chlorine level in the water was increased to 2-3 ppm and an ordinance to boil water was issued.

Reported by A Keifer, MD, G Lynch, Plumas County Health Dept, D Conwill, MD, RR Roberto, MD, MPH, C Powers, MS, J Gaston, MS, California State Dept of Health Services, in the California Morbidity Weekly Report, November 23, 1979; RW Sherwood, MD, MPH, L Johnston, PhD, Larimer County Health Dept, Fort Collins, Colorado; J Blair, B Early, RS Hopkins, MD, State Epidemiologist, E Scott, R Smade, Colorado State Dept of Health; H Osterud, MD, N Slifman, MD, University of Oregon

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Health Sciences Center, J Schilke, MD, C Hills, RN, Clackamas County Public Health Div, JA Googins, MD, State Epidemiologist, Oregon Dept of Human Resources, in the Oregon Communicable Disease Summary, January 19, 1980; TJ Burkhart, MD, J Jenkins, MT, Bradford Hospital, Bradford, Pennsylvania; EJ Witte, VMD, MPH, Acting State Epidemiologist, M McCarthy, RN, T de Melfi, Pennsylvania State Dept of Health; J Erb, Dept of Environmental Resources, state of Pennsylvania; EC Lippy, MS, Environmental Protection Agency; Parasitic Diseases Div, Field Services Div, Water-Related Diseases Activity, Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: The long-term solution to waterborne giardiasis requires improvements in and widespread use of water filtration. In the meantime, there is a continuing need to provide potable drinking water on an emergency basis to communities experiencing an outbreak. This has been accomplished in some communities by switching from surface water to well water sources, transporting drinking water from a nearby community whose water supply is not affected, and using bottled water. However, in most instances alternative water supplies have not been readily available, and the costs of transporting water have been prohibitive. The only alternative in these situations is to kill Giardia cysts in the existing water supply. Regardless of the method used, it must be continued until the source of water contamination is eliminated or until the deficiencies in water treatment are corrected. Boiling is the most reliable method for killing Giardia cysts in water. Although time/temperature studies have not been done to determine the thermal death point of *Giardia* cysts, data are available on *Ascaris* eggs, acknowledged by most parasitologists to be the most resistant of parasite eggs and more resistant to physical and chemical factors than protozoan cysts. Ascaris eggs are immediately killed at 70 C (1). Since Giardia cysts would succumb to even lower temperatures, simply bringing drinking water to a boil is considered more than adequate to kill Giardia cysts. In circumstances where gross fecal contamination of the water supply is evident, boiling water for a longer period of time may be warranted to kill other enteric pathogens.

The effects of chemical disinfectants on *Giardia* cysts have received only limited study. It is evident from these and other outbreaks that chlorine levels used in routine disinfection of municipal drinking water (0.4 mg/l free chlorine) are not effective against Giardia cysts. Recent experimental data suggest that hyperchlorination (5-9 mg/l free chlorine residual) may kill Giardia cysts (2,3). To determine the viability of cysts following exposure to various concentrations of chlorine, the investigators employed a recently developed method for inducing Giardia cysts to excyst in vitro. If Giardia cysts failed to excyst after treatment with chlorine, they were assumed to be dead. However, animal infectivity studies to validate the reliability of this technique for assessing viability have not been done. The amount of chlorine required to inhibit excystation of Giardia cysts depends on the water temperature, pH, turbidity, and contact time between the parasite and chlorine. In general, higher concentrations of chlorine are required for water that is cold (3-5 C), has an alkaline pH, or is turbid. Chlorine concentrations may be decreased if contact time with the organism is increased. By manipulating these variables it may be possible to reduce free chlorine residual to a level that would be satisfactory for use in municipal drinking water and still be effective against Giardia cysts. The minimum chlorine levels and optimal water conditions necessary to kill Giardia cysts in municipal water supplies are yet to be determined.

### References

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# Follow-up on Formula-Associated Illness in Children

Since the summer of 1979, CDC has learned of 120 cases of formula-associated infant metabolic alkalosis (1,2). Cases have been reported by physicians, parents, and the Food and Drug Administration. The earliest reported case occurred in October 1978 and the latest in August 1979. All cases involved infants who had been taking Neo-Mull-Soy or CHO-free, the 2 soy-based infant formulas manufactured by the Syntex Corporation. Analysis of the formula revealed low levels of chloride.

Most babies who developed metabolic alkalosis were using these formulas as their sole source of nourishment for at least 2 months. However, most babies who used these formulas did not develop the alkalosis. Most were also receiving other foods and appear to have received enough chloride from these foods to prevent the occurrence of the chloride deficiency and alkalosis.

The formulas manufactured by Syntex from the summer of 1978 through the summer of 1979 were chloride deficient. Infants who used either formula before that time were probably not in jeopardy of having a chloride deficiency. Those infants who used the chloride-deficient formula but continued to gain weight, did not have a decrease in their growth rate, and did not develop alkalosis are not expected to have any long-term problems. Most of the children who were chloride deficient and had metabolic alkalosis recovered quickly when chloride was replaced and they were changed to another formula.

(Continued on page 129)

|   | 11th W            | EEK ENDING         |                     | CUMULATIVE, FIRST 11 WEEKS |                    |                     |  |
|---|-------------------|--------------------|---------------------|----------------------------|--------------------|---------------------|--|
| DISEASE   | March 15,<br>1980 | March 17,<br>1979* | MEDIAN<br>1975-1979 | March 16,<br>1980          | March 17,<br>1979* | MEDIAN<br>1975-1979 |  |
| Aseptic meningitis                                | 76                | 50                 | 35                  | 686                        | 542                | 411                 |  |
| Brucellosis                                       | 3                 | 1                  | 3                   | 37                         | 15                 | 34                  |  |
| Chickenpox  | 6,189             | 7,890              | 6,395               | 55,189                     | 66,097             | 61,439              |  |
| Diphtheria  | 1 1 - 12          | 9                  | - 3                 | 1                          | 49                 | 49                  |  |
| Encephalitis: Primary (arthropod borne & unspec.) | 10                | 6                  | 9                   | 127                        | 100                | 130                 |  |
| Post-infectious                                   | 6                 | 5                  | - 4                 | 30                         | 39                 | 39                  |  |
| Hepatitis, Viral: Type B                          | 378               | 278                | 303                 | 3,283                      | 2,776              | 2,995               |  |
| Туре А  | 550               | 585                | 633                 | 5,609                      | 6,262              | 7.072               |  |
| Type unspecified                                  | 210               | 256                | 162                 | 2,328                      | 2,148              | 1,832               |  |
| Malaria   | 20                | 12                 | 10                  | 258                        | 83                 | 59                  |  |
| Measles (rubeola)                                 | 329               | 356                | 813                 | 2,005                      | 2.983              | 4.904               |  |
| Meningococcal infections: Total                   | 83                | 75                 | 58                  | 681                        | 737                | 495                 |  |
| Civilian  | 83                | 72                 | 58                  | 677                        | 733                | 493                 |  |
| Military  | -                 | 3                  | 1                   | 4                          | 4                  | 4                   |  |
| Mumps   | 245               | 365                | 643                 | 3,073                      | 3,936              | 6.552               |  |
| Pertussis   | 20                | 28                 | 15                  | 217                        | 304                | 249                 |  |
| Rubella (German measles)                          | 175               | 609                | 609                 | 977                        | 2,598              | 3,141               |  |
| Tetanus   | 1                 | 1                  | 1                   | 7                          | 6                  | 8                   |  |
| Tuberculosis                                      | 518               | 548                | 617                 | 5.112                      | 5.435              | 5.933               |  |
| Tularemia   | 3                 | -                  | -                   | 19                         | 25                 | 17                  |  |
| Typhoid fever                                     | 10                | 9                  | 9                   | 54                         | 17                 | 74                  |  |
| Typhus fever, tick-borne (Rky. Mt. spotted)       | 2                 | 1                  | 1                   | 8                          | 14                 | 11                  |  |
| Venereal diseases:                                |                   |                    |                     |                            |                    |                     |  |
| Gonorrhea: Civilian                               | 18,225            | 19,017             | 17,976              | 199,266                    | 201,005            | 199,060             |  |
| Military  | 595               | 559                | 477                 | 5,917                      | 5,935              | 5,935               |  |
| Syphilis, primary & secondary: Civilian           | 510               | 506                | 466                 | 5,602                      | 5,139              | 5,139               |  |
| Military  | 6                 | 5                  | 4                   | 86                         | 64                 | 64                  |  |
| Rabies in animals                                 | 86                | 82                 | 57                  | 931                        | 640                | 489                 |  |

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#### TABLE II. Notifiable diseases of low frequency, United States

|                               | CUM. 1980 |  | CUM. 1980 |
|-------------------------------|-----------|--|-----------|
| Anthrax                       |           | Poliomyelitis: Total                       | 1         |
| Botulism t                    | 8         | Paralytic                                  | 1         |
| Congenital rubella syndrome 1 | 21        | Psittacosis                                | 15        |
| Leprosy t(Va. 1, Calif. 2)    | 32        | Rabies in man                              | -         |
| Leptospirosis †(Hawaii 1)     | 10        | Trichinosis †                              | 9         |
| Plague                        |           | Typhus fever, flee borne (endemic, murine) | 5         |

\* Delayed reports received for calendar year 1979 are used to update last year's weekly and cumulative totals.

Delayed reports: Botulism: Ohio +1 (1980), Alaska -1 (1979); Cong. rubella: Vt. +1 (1979); Leprosy: Pac.Tr.Terr. +1 (1980); Lepto spirosis: Pa. +1 (1979); Trichinosis: Pa. +3 (1979).

|                         | ASEPTIC         | BRU-          | CHICKEN |       |              | ENCEPHALITIS |       | HEPATI               | TIS (VIRAL |      |             |      |              |
|-------------------------|-----------------|---------------|---------|-------|--------------|--------------|-------|----------------------|------------|------|-------------|------|--------------|
| REPORTING AREA          | MENIN-<br>GITIS | CEL-<br>Losis | POX     | DIPHT | HERIA        | Pri          | mary  | Post-in-<br>fectious | 8          | A    | Unspecified | MA   | ARIA         |
|                         | 1980            | 1980          | 1980    | 1980  | CUM.<br>1980 | 1980         | 1979* | 1980                 | 1980       | 1980 | 1980        | 1980 | CUM.<br>1980 |
| UNITED STATES           | 76              | 3             | 6,189   | -     | 1            | 10           | 6     | 6                    | 378        | 550  | 210         | 20   | 258          |
| NEW ENGLAND             | 2               | -             | 408     | -     | -            | -            |       | -                    | 10         | 6    | 17          | 1    | 19           |
| N.H.t                   | _               | -             | 23      | -     | _            |              | -     | _                    | _          | -    | -           | -    | . 1          |
| Vt.                     | -               | -             | 19      | -     | -            | -            | -     | -                    | -          | -    | -           | -    |              |
| Mass.                   | 2               | -             | 107     | -     | -            | -            | -     | -                    | 4          | 3    | 16          | -    | 11           |
| R.I.                    | -               | -             | 22      | -     | -            | -            | -     | -                    | 1          | 1    | -           | -    | 1            |
| Conn.                   | -               | -             | 166     | -     | -            | -            | -     | -                    | 5          | 2    | 1           | -    | 3            |
| MID. ATLANTIC           | 12              | -             | 195     | -     | 1            | 2            | 2     | -                    | 49         | 50   | 19          | 3    | 47           |
| Upstate N.Y.            | 1               | -             | 92      | -     | -            | 1            | 1     |                      | 15         | 21   | 6           | •    | 4            |
| N.Y. City               | 4               | -             | 94      | -     | 1            | 1            | 1     | -                    | 14         | 11   | 4           | 2    | 22           |
| N.J.<br>Pa.             | 6               | -             | NN      | -     | -            | _            | -     | -                    | 9          | 8    | 8           | 1    | 15           |
|                         | •               |               | ,       |       |              |              |       |                      | ••         | 10   |             |      | •            |
| E.N. CENTRAL            | 3               |               | 2.873   | -     |              | 1            |       | 2                    | 50         | 87   | 29          | 1    | 1            |
| Ind t                   | 2               | -             | 501     | -     | -            | 1            | -     | -                    | 14         | 20   | 12          | - E. | -            |
| 10.                     |                 |               | 572     | -     | _            |              |       |                      | 17         | 27   |             | 1    |              |
| Mich.t                  | -               |               | 966     | -     | _            | _            |       | _                    | 12         | 26   |             |      | - î          |
| Wis.t                   | _               | -             | 757     | _     | -            | -            | -     | 2                    | 4          | -8   | é           | -    | ī            |
| W.N. CENTRAL            | -               | _             | 998     | -     | -            | 1            |       | _                    | 7          | 18   | 6           | 1    | 7            |
| Minn.                   | -               | -             | 1       | -     | -            | -            | -     | -                    | 2          | 7    | -           | -    | 5            |
| lowa                    | -               | -             | 382     | -     | -            | 1            | -     | -                    | 1          | 2    | 2           | 1    | 2            |
| Mo.                     | -               | -             | 195     | -     | -            | -            | -     | -                    | 4          | 6    | 4           | -    | -            |
| N. Dak.                 | -               | -             | 24      | -     | -            | -            | -     | -                    | -          | -    | -           | -    | -            |
| S. Dak.                 | -               | -             | 26      | -     | -            | -            | -     | -                    | -          | 2    | -           | -    |              |
| Kans.                   | -               | -             | 286     | -     | _            |              | -     | -                    |            | 1    | 1           | -    | -            |
| S ATLANTIC              |                 | _             | 770     |       |              | ,            |       |                      | 92         | 03   | 17          | 4    | 20           |
| Del.t                   | ~~              | 1             | 11      | -     | -            | -            |       | 1                    | 2          | -    |             | 1    |              |
| Md.                     | -               | -             | 212     | -     | -            | -            | -     | 1                    | 23         | 6    | 14          | -    | 5            |
| D.C.1                   | -               | -             | 7       | -     | -            | -            | -     |                      | 2          | 2    | -           | -    | 1            |
| Va.†                    | 6               | -             | 13      | -     | -            | 1            | -     | -                    | 6          | 6    | 2           | 2    | 10           |
| W. Va.†                 | 1               | -             | 114     | -     | -            | +            | -     | -                    | 5          | -    | -           | -    | L            |
| N.C.T                   | 3               | -             | NN      | -     | -            | -            | -     | -                    | 7          | 9    | 5           | -    | 3            |
| S.C.<br>Ga              | 1               | -             | 31      | -     | -            | 1            | -     | -                    | 21         | 6    | 5           | 2    | 2            |
| Fla.                    | ū               | -             | 388     | -     | _            |              | -     | -                    | 19         | 50   |             | -    | 5            |
| ES CENTRAL              |                 |               |         |       |              |              |       |                      |            |      |             |      |              |
| Ky                      | - 1             | -             | 100     | -     | -            | _            | -     | -                    | 34         | 23   | 2           | ÷.   | 2            |
| Tenn                    | 2               | -             | 41      | -     | -            | -            | _     | -                    | 13         | 2    | 3           |      | 2            |
| Ala.†                   |                 |               | 37      |       | -            |              |       | _                    | 10         | - Z  | 2           | -    |              |
| Miss.                   | -               | -             | 26      | -     | -            | K            | -     | -                    | 2          | 7    |             | -    | -            |
| W.S. CENTRAL            | 7               | 2             | 445     |       |              |              |       |                      | 21         | 71   | 32          | -    | 25           |
| Ark t                   | -               | 2             | 14      |       |              | -            | 1     |                      | 5          | 6    | -           | -    | 1            |
| La.                     | 2               |               | NN      | _     | -            | _            | -     | -                    |            | _    | -           | -    | 14           |
| Okla.                   | 2               | 2             | -       | -     | -            | -            | -     | 1                    | 4          | 12   | 10          |      | 6            |
| Tex.                    | 3               | 1             | 451     | -     | -            | 1            | 1     | -                    | 12         | 53   | 22          | -    | 4            |
| MOUNTAIN                | 3               | _             | 135     | -     | -            |              | -     | _                    | 13         | 48   | 20          | -    | 9            |
| Mont.t                  | 1               | -             | 36      | -     | -            | -            |       | _                    | -          | -    | -           | -    |              |
| Idaho                   | -               | -             | 1       | _     | -            | -            | -     | -                    | -          | _    | -           | -    | -            |
| Wya.                    | -               | -             | -       | -     | -            | -            |       | _                    | -          | -    | 1           | -    | 1            |
| Colo.                   | 3               | -             | 98      | -     | -            | -            | -     | -                    | 1          | 19   | 4           | -    | 4            |
| N. Mex.                 | -               | -             | -       | -     | -            |              | -     | -                    | -          | -    | -           | -    | -            |
| Ariz.                   | -               | -             | NN      | -     | -            | -            | -     | -                    | 1          | 19   | 11          | -    | 3            |
| Nev.                    |                 | -             | -       | -     | -            | -            | 1     | 1                    | 4          | 3    | 1           | -    | - 7          |
| BACIFIC                 |                 |               |         |       |              |              |       |                      | -          |      |             |      | •            |
| Wash                    | 23              | -             | 237     | -     | -            | 4            | 3     | 2                    | 102        | 154  | 45          | 10   | 116          |
| Orea.                   | 1               | -             | 209     | -     | -            |              | -     | -                    | د ا        | 11   |             | Z.   | 12           |
| Calif.t                 | 2               | -             | 2       | -     | -            | 1            | 1     | -                    | 10         | 13   |             | 4    | 9            |
| Alaska                  | 20              | _             | -       | -     |              | -            | 4     | 4                    | 67         | 129  |             | -    | 94           |
| Hawaii                  | -               | -             | 25      | -     | -            | -            | -     | 1                    | -          |      | -           |      | -            |
|                         |                 |               |         |       |              |              |       |                      |            |      |             |      |              |
| Guam                    | NA              | NA            | NA      | NA    | -            | NA           | -     | -                    | NA         | NA   | NA          | NA   | -            |
| P.H.T                   | 1               | -             | 15      | -     | -            | -            | -     | -                    | L          | 6    | 3           | _    | -            |
| V.I.<br>Pag Taur Taur / |                 |               |         | -     | -            |              | -     | -                    |            |      |             | -    | -            |
| au. Trust terr. T       | NA              | NA            | NA      | NA    |              | NA           | -     | -                    | NA         | NA   | NA          | NA   | -            |

## TABLE III. Cases of specified notifiable diseases, United States, weeks ending March 15, 1980, and March 17, 1979 (11th week)

NN: Not notifiable. NA: Not available.

\*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals.

The following delayed reports will be reflected in next week's cumulative totals: Asep. meng.: Ind. +1, Mich. -1; Chickenpox: D.C. +5, W.Va. +4, Ala. +25, Calif. +94, Pac.Tr.Terr. +42; Enceph.: Ind. +2, Mont. +1; Hep. B: N.H. +1, Del. +1, D.C. +1, Ark. -2, Mont. +1; Hep. A: Wis. -1, Mont. +6, P.R. +1, Pac.Tr. Terr. +41; Hep. unsp.: Va. -1, N.C. -1; Malaria: Ohio +1.

|                | м    | EASLES (RU   | BEOLA)        | MENING | OCOCCAL INI<br>TOTAL | FECTIONS      | ,    | NUMPS        | PERTUSSIS    | RUB  | TETANUS      |              |
|----------------|------|--------------|---------------|--------|----------------------|---------------|------|--------------|--------------|------|--------------|--------------|
| REPORTING AREA | 1980 | CUM.<br>1980 | CUM.<br>1979* | 1980   | CUM.<br>1980         | CUM.<br>1979* | 1980 | CUM.<br>1980 | 1980         | 1980 | CUM.<br>1980 | CUM.<br>1980 |
| UNITED STATES  | 329  | 2,005        | 2,983         | 83     | 681                  | 737           | 245  | 3,073        | 20           | 175  | 977          | 7            |
| NEW ENGLAND    | 42   | 193          | 109           | 5      | 30                   | 21            | 4    | 287          | I            | 4    | 57           | -            |
| Maine          | -    | 1            | 3             | -      | 1                    | 1             | 3    | 96           | -            | -    | 18           | -            |
| N.H.t          | 24   | 99           | 3             | -      | 3                    | 3             | -    | 6            | -            | 1    | 17           | _            |
| Vt             | 18   | 90           | 3             |        | 1                    | 1             | -    | -            | -            | -    | _            | -            |
| Mass.t         | -    | -            | -             | 1      | 13                   | 7             | -    | 97           | -            | 3    | 15           | -            |
| R.I.           | -    | 2            | 100           | 1      | 2                    | -             | 1    | 11           | -            | -    |              | -            |
| Conn.          |      | L            | -             |        | 10                   | ÿ             | -    |              | -            | -    | '            | -            |
| MID. ATLANTIC  | 60   | 444          | 163           | 19     | 114                  | 109           | 6    | 358          | 2            | 13   | 72           | 1            |
| Upstate N.Y.   | 44   | 117          | 22            | 0      | 40                   | 40            | -    | 28           | 1            |      | 37           | -            |
| N.Y. City      | 15   | 74           | 15            | 7      | 21                   | 20            | 1    | 27           | 1            | 1    | 10           | - 1          |
| N.J.<br>Pa.    | -    | 128          | 7             | -      | 11                   | 10            | 1    | 255          | -            | -    | 4            | 1            |
| E.M. CENTRAL   | 72   | 258          | 793           | 6      | 72                   | 67            | 147  | 1,116        | 7            | 48   | 250          | -            |
| Ohio †         | 34   | 52           | 4             | -      | 24                   | 21            | 100  | 502          | 5            | -    | 1            | -            |
| Ind.1          | 4    | 16           | 65            |        | 10                   | 18            | 2    | 39           | L            |      | 88           | -            |
| 111.           | 11   | 60           | 320           | 3      | 11                   |               | 10   | 125          |              | 23   | 53           | -            |
| Mich.          | 17   | 10           | 269           | 2      | 21                   | 21            | 21   | 323          | 1            |      | 70           | -            |
| Wis.           |      | 60           | 135           | 1      |                      | '             | •    | 121          | -            |      | 30           | -            |
| W.N. CENTRAL   | 52   | 278          | 330           | 3      | 25                   | 25            | 5    | 105          | I            | 1    | 85           | 1            |
| Minn.          | 39   | 143          | 135           | 1      | 9                    | 3             | -    |              | 1            | -    |              | 1            |
| lowa           |      | 34           | 182           | 1      | 9                    | 15            | 2    | 13           |              |      | 21           |              |
| MO.            | -    | -            | 102           | -      | ,                    | 1             | -    | 3            | _            | -    |              | _            |
| N. Dak.        | -    | -            | ĩ             | _      | ;                    | i             | -    | 1            | -            | -    |              | -            |
| Nobe           | 6    | 12           |               | -      | -                    |               | 1    | 8            | -            | -    | -            | _            |
| Kans.          | 1    | 38           | 8             | 1      | 2                    | 2             | 1    | 32           | 3 <b>4</b> 0 | -    | 53           | -            |
| S. ATLANTIC    | 25   | 442          | 376           | 31     | 168                  | 192           | 43   | 310          | 6            | 17   | 99           | 2            |
| Del.           | -    | 1            |               | 1      | 1                    | 2             | 2    | 26           | -            | -    | -            | -            |
| Md.            | -    | 10           | ,             |        | 13                   | 10            | -    | 83           |              | -    | _            | -            |
| Ð.C.           | 12   | 97           | 29            | 3      | 15                   | 31            | 2    | 25           | -            | -    |              | 1            |
| Va.<br>W. Vo.t | 12   |              | 31            | -      | 11                   | 1             | 26   | 59           | -            | 1    | 9            | -            |
| N.C.           | 5    | 34           | 49            | 6      | 33                   | 24            | 6    | 53           | -            | 11   | 26           | _            |
| S.C.           | -    | -            | 46            | 6      | 22                   | 28            | L .  | 11           | 1            | 2    | 37           | 1            |
| Ga.            | -    | 191          | 2             | 6      | 38                   | 31            | -    | -            | 4            | -    | -            | -            |
| Fla.           | 8    | 101          | 214           | 9      | 43                   | 63            | 5    | 51           | 1            | 3    | 24           | -            |
| E.S. CENTRAL   | -    | 48           | 44            | 6      | 68                   | 56            | 12   | 542          | -            | -    | 34           | - 1          |
| Ky.            | -    | 29           | 8             | 1      | 19                   | 11            | 11   | 511          | -            | -    | 14           | _            |
| Tenn.          | -    | 6            | 6             | 2      | 17                   | 16            | 1    | 13           | -            | -    | 19           | -            |
| Ala            | -    | 12           | 24            | -      | 18                   | 16            | -    | 4            | -            | -    | 1            | -            |
| Migs.T         |      | 1            | 6             | 3      | 14                   | 13            | -    | 14           |              | -    | -            | -            |
| W.S. CENTRAL   | 35   | 136          | 363           | 4      | 76                   | 129           | 9    | 88           | 3            | 2    | 32           | -            |
| Ark.           | -    | 1            | 6             | -      | 3                    | 12            | 2    | 12           | -            | -    | L            | -            |
| La             |      | 5            | 95            | -      | 26                   | 60            | 1    | 16           | -            | -    | 2            | -            |
| Okla.<br>Tex.  | 6    | 65           | 259           | 2      | 41                   | 44            | 6    | 60           | 2            | 2    | 29           | -            |
| MOUNTAIN       | 7    | 46           | 63            | 1      | 24                   | 32            | 3    | 75           | -            | 2    | 25           | _            |
| Mont           | -    | 1            | 16            | -      | - i                  | 2             | ĩ    | 22           | -            | -    | -            | -            |
| Idaho          | -    | -            | 2             | -      | 3                    | 3             | ī    | 6            | -            | 2    | 2            | -            |
| Wyo.           | -    | -            | -             | -      | 1                    | -             | -    | -            | -            | -    | -            | -            |
| Colo.          | 1    | 2            | 4             | -      | 8                    | 1             | 1    | 18           | -            | -    | L            | -            |
| N. Mex.        | -    |              | 10            | -      | -                    | 2             | -    |              | -            | -    | -            | -            |
| Ariz.          | -    | 14           | 15            | -      | 5                    | 20            | -    | 11           | -            | -    |              | -            |
| Nev.           | -    | 21           | 3             | 1      | 5                    | 1             | -    | 15           | -            | -    | 3            | -            |
| PACIEIC        | 36   | 160          | 743           | A      | 104                  | 106           | 14   | 192          |              | 8.8  | 1 2 3        | 3            |
| Wash           | 10   | 40           | 399           | 3      | 17                   | 15            | 3    | 61           | i            | -    | و د د        |              |
| Orea.          | -    | -            | 8             | 2      | 18                   |               | 1    | 29           | -            | _    | 20           | -            |
| Calif.         | 16   | 114          | 293           | 3      | 68                   | 78            | 12   | 97           | _            | 88   | 284          | 3            |
| Alaska         | 1    | 3            | 6             |        | 1                    | 1             | -    | 3            | -            |      | 1            | -            |
| Hawaii         | -    | 3            | 36            | -      |                      | 4             | -    | 2            | 1            | -    | 7            | _            |
|                |      |              |               | _      |                      | - C.          | NC   |              |              |      |              | -            |
| Guam           | 3    | 18           | 1 03          | 1      | 5                    |               | 3    | 30           | NA -         | N A  | ,            | 3            |
| V.I.           | -    | 4            | 1             |        | -                    | 2             | -    | 1            | -            | -    | -            | -            |
|                |      |              | -             |        |                      |               |      |              |              |      |              |              |

# TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending March 15, 1980, and March 17, 1979 (11th week)

NA: Not available. \*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals. †The following delayed reports will be reflected in next week's cumulative totals: Measles: N.H. +13, W.Va. –2, Miss. +45, Pac.Tr.Terr. +3; Men. inf.: Ohio +2, Ind. +2; Mumps: Mass. –1, W.Va. +1, Mont. +2, Pac.Tr.Terr. +1; Pertusis: Pac.Tr.Terr. +234; Rubella: W.Va. –2, Mont. +1, Pac.Tr.Terr. +1;

|                      | TUPE | 80111.0515   | TULA         | ТУР      | ногр         | TYPHUS FEVER VENEREAL DISEASES |                 |        | (Civilian)      | RABIES        |      |              |               |                  |
|----------------------|------|--------------|--------------|----------|--------------|--------------------------------|-----------------|--------|-----------------|---------------|------|--------------|---------------|------------------|
| REPORTING AREA       | 1085 |              | REMIA        | FE       | VER          | (Tick<br>(R                    | ·borne)<br>MSF) |        | GONORRHEA       |               | S    | PHILIS (P    | ri. & Sec.)   | - {in<br>Animals |
|                      | 1980 | CUM.<br>1980 | CUM.<br>1980 | 1980     | CUM.<br>1980 | 1980                           | CUM.<br>1980    | 1980   | CUM.<br>1980    | CUM.<br>1979* | 1980 | CUM.<br>1980 | CUM.<br>1979* | CUM.<br>1980     |
| UNITED STATES        | 518  | 5,112        | 19           | 10       | 54           | 2                              | 8               | 18,225 | 199,266         | 201,005       | 510  | 5.602        | 5,139         | 931              |
| NEW ENGLAND<br>Maine | 19   | 157          | -            | 1        | 5            | -                              | -               | 387    | 5,277           | 5,280         | 15   | 177          | 94            | 10               |
| N.H.                 | -    | 2            | —            | -        | -            |                                | -               | 13     | 175             | 167           | _    | -            | 4             | -                |
| Vt.                  | 2    | 7            | -            | -        | -            | -                              | -               | 5      | 1 50            | 83            | -    | 1            | -             | -                |
| Mass.                | 14   | 73           | -            | 1        | 3            | -                              | -               | 160    | 2,090           | 2,102         | 8    | 110          | 59            | 1                |
| R.I.<br>Cone         |      | 20           | -            | -        | 1            | -                              | _               | 28     | 301             | 439           | 1    | 6            | 3             | -                |
|                      | 2    | 40           | -            | -        | 1            | -                              | -               | 169    | 2,225           | 2.148         | 6    | 60           | 27            | -                |
| MID. ATLANTIC        | 72   | 963          | -            | 4        | 9            | -                              | 1               | 1.627  | 22,306          | 21,156        | 64   | 783          | 812           | 2                |
| N.Y. City            | 10   | 247          | -            | -        | -            | -                              | -               | 415    | 31544           | 2,956         | 6    | 60           | 57            | -                |
| N.J.                 | 19   | 206          | -            | 5        | 3            |                                | _               | 71     | 4.216           | 6.252         | *3   | 101          | 100           | -                |
| Pa.                  | 24   | 216          | -            | -        | ĩ            | -                              | 1               | 441    | 5,609           | 5,924         | a    | 104          | 101           | -                |
| E.N. CENTRAL         | 61   | 655          | 1            | -        | 6            | -                              | _               | 2,235  | 30,186          | 31,660        | 70   | 496          | 689           | 105              |
| Ohio                 | 6    | 121          | -            | -        | -            | -                              |                 | 1,043  | 8,761           | 8,867         | 3    | 85           | 154           | 2                |
| Ind.                 | -    | 82           | -            | -        | -            | -                              | -               | 165    | 3,413           | 2,387         | 1    | 60           | 36            | 10               |
| Mich                 | 29   | 246          | -            | -        | 3            | -                              | -               | 466    | 7.755           | 10.274        | 6    | 170          | 395           | 63               |
| Wie t                | 22   | 158          | 1            | -        | 3            | -                              | -               | 561    | 7,095           | 7,336         | 60   | 158          | 81            |                  |
|                      | 4    | 48           |              |          | -            | -                              | -               | NA     | 3,102           | 2.796         | NA   | 23           | 23            | 30               |
| W.N. CENTRAL         | 20   | 157          | 8            | 1        | 1            | -                              | 2               | 982    | 8,953           | 9.646         | 6    | 60           | 62            | 279              |
| Minn.                | 1    | 26           | 1            | -        | -            | -                              | -               | 290    | 1.660           | 1.716         | 5    | 23           | 20            | 33               |
| Mo                   |      | 11           | 4            | -        | -            | -                              | -               | 100    | 1,007           | 1,280         | -    | 3            | 6             | 62               |
| N. Dak.              | ~    | 61           | ~            | - 2 -    |              | -                              | 2               | 317    | 3,631           | 4,053         | _    | 31           | 22            | 72               |
| S. Dak.              | 1    | 7            | _            | 1        | 1            | -                              | -               | 15     | 288             | 221           |      |              |               | 23               |
| Nebr.                | î    | i i          | 1            | -        | -            | -                              | -               | 89     | 753             | 621           | _    | 2            | 1             | 1                |
| Kans.                | 4    | 27           | 1            | -        | -            | -                              | -               | 162    | 1,493           | 1,494         | 1    | ī            | 13            | 21               |
| S ATLANTIC           | 120  | 1,180        | 5            | 1        | 14           | 1                              | 4               | 4,260  | 48,841          | 47.591        | 139  | 1.360        | 1,316         | 86               |
| Del.                 | .1   | 20           | -            | -        | 1            | -                              | -               | 51     | 7 30            | 747           |      | 5            | 8             |                  |
| Ma.<br>DC            | 11   | 139          |              | -        |              | _                              | _               | 581    | 4.989           | 5,708         | - 11 | 105          | 88            | -                |
| Va                   | 10   | 140          |              | -        | 2            | - 2                            |                 | 3/5    | 3,004           | 21933         |      | 80           | 91            | -                |
| W. Va.               | 3    | 49           | _            | _        | 1            | _                              | _               | 53     | 592             | 4,551         | 19   | 119          | 20            |                  |
| N.C.                 | 23   | 211          | 2            | _        | 1            | _                              | 2               | 669    | 7.762           | 7.520         | 20   | 103          | 123           | -                |
| S.C.                 | 11   | 93           |              | -        | ī            | -                              | -               | 397    | 4.580           | 3.985         | 13   | 74           | 72            | 14               |
| Ga.                  | 13   | 151          | 2            | -        | -            | 1                              | 2               | 799    | 8,745           | 9,009         | 32   | 394          | 342           | 49               |
| Fla.†                | 26   | 311          |              | -        | 3            | -                              | -               | 1,079  | 13,778          | 12,477        | 41   | 470          | 439           | 21               |
| E.S. CENTRAL         | 51   | 483          | 1            | -        | 2            | -                              | -               | 1,582  | 16,367          | 17.569        | 44   | 458          | 369           | 44               |
| Ky.                  | 16   | 102          | -            | -        | 1            | -                              | -               | 232    | 2,353           | 2,436         | 3    | 27           | 38            | 24               |
| Tenn.                | 13   | 156          | L            | -        | -            | -                              | -               | 603    | 5.845           | 6,143         | 20   | 194          | 159           | 17               |
| Ala.                 | 16   | 146          |              |          | 1            | -                              |                 | 393    | 4,615           | 5,201         | 13   | 87           | 70            | 3                |
| Miss.                | 6    | "            | -            | -        | -            | 1.1                            |                 | 354    | 3,554           | 3,789         | 8    | 150          | 102           |                  |
| W.S. CENTRAL         | 60   | 438          | -            | L        | 1            | 1                              | 1               | 2,831  | 26,321          | 27,070        | 101  | 1,061        | 847           | 293              |
| Ark.                 | 5    | 35           | -            | -        | -            | -                              | -               | 192    | 1,955           | 2,146         | 5    | 40           | 26            | 38               |
| La.†                 | 11   | 99           | -            | -        | -            | -                              | -               | 414    | 4,170           | 4,632         | 47   | 258          | 171           | 3                |
| Tex.                 | 36   | 254          | -            | ī        | 1            | ī                              | ĩ               | 202    | 2,593<br>17,603 | 2,339         | 46   | 747          | 635           | 215              |
| MOUNTAIN             | 19   | 146          | 2            | _        | 3            | _                              |                 | 646    | 7.435           | 7.017         |      | 1 27         | 65            | 17               |
| Mont.t               | 3    | 8            |              | -        | ĩ            | -                              | _               | 18     | 277             | 446           | -    | -            | 4             | - î;             |
| Idaho                | _    | 4            | 1            | -        |              | -                              | -               | 49     | 389             | 350           | 1    | a            | 6             |                  |
| Wyo.                 | -    | 9            | -            | -        | -            | -                              | -               | 21     | 226             | 200           |      | - 4          | 3             | -                |
| Colo.t               | 2    | 16           | -            | -        | 1            | -                              | -               | 213    | 1,941           | 2.147         | 3    | 36           | 25            | -                |
| N. Mex.              | - 5  | 27           | -            | -        | -            | -                              | -               | 73     | 1.090           | 965           | 5    | 23           | -7            | 2                |
| Ariz.                | 6    | 67           | 1            | -        | 1            | -                              | -               | 149    | 2,061           | 2,156         | -    | 40           | 11            | 14               |
| Nev.                 | 3    | 10           | -            | -        | _            | -                              | - E -           | 35     | 371             | 390           | - 2  | 12           | 1             |                  |
| PACIFIC              |      | 033          |              | 2        |              |                                |                 |        |                 |               |      |              |               |                  |
| Wash.t               | 70   | 26 Y<br>7 P  | -            | <u> </u> | - 13         | -                              | -               | 316/5  | 33,380<br>2,545 | 33,221        | 62   | 11080        | 885           | 95               |
| Oreg.                | -    | 45           | _            | _        | _            | _                              | -               | 207    | 2,305           | 2.004         | ,    | 27           | 20            |                  |
| Calif.               | 94   | 795          | 2            | 2        | 13           | -                              | -               | 2.888  | 27.274          | 26.624        | 56   | 968          | 763           | 97               |
| Alaska †             |      | ĩ            | - 2          |          | -            | -                              | -               | 82     | 783             | 1.085         | -    | 2            |               | 15               |
| Hawaii               | -    | 14           | -            | -        | -            | -                              | -               | 51     | 450             | 554           | 4    | 15           | 17            |                  |
|                      |      |              |              |          |              |                                |                 |        |                 |               |      |              |               |                  |
| Guam                 | NA   | 2            | -            | NA       | -            | NA                             | -               | NA     | 12              | 20            | NA   | -            | -             | -                |
| V I                  | 0    | 27           | _            |          | _            |                                | -               | 50     | 503             | 405           | 12   | 115          | 126           | 12               |
| Pac. Trust Terr +    | NA   |              |              | NA       | 1            | NA                             | -               | N A    | 46              | 36            | N.A. | 0            | -             | - T              |
| inwas roll.          |      |              |              |          |              | 110                            | -               |        |                 | 9.4           | (1 A | -            | -             | -                |

# TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending March 15, 1980, and March 17, 1979 (11th week)

MA: Not available. MA: Not available. \*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals. \*Delayed reports will be reflected in next week's cumulative totals: TB: III. +18, Fla. –1, Mont. +1, Alaska +6, Pac.Tr.Terr. +7; GC: Wis. –2 civ., Fla. +27 mil., La. –1 civ., Colo. –1 civ., Wash. +222 civ., Pac.Tr.Terr. +94 civ.; An. rabies: Alaska +30.

## TABLE IV. Deaths in 121 U.S. cities,\* week ending March 15, 1980 (11th week)

|                                      | ALL CAUSES, BY AGE (YEARS) |       |                  |       |     |                 |                       |             |       |       |       |        |                 |
|--------------------------------------|----------------------------|-------|------------------|-------|-----|-----------------|-----------------------|-------------|-------|-------|-------|--------|-----------------|
| REPORTING AREA                       | ALL                        | >65   | 45-64            | 25-44 | <1  | P& I**<br>TOTAL | REPORTING AREA        | ALL<br>AGES | >65   | 45-64 | 25-44 | <1     | P& I**<br>TOTAL |
| NEW ENGLAND                          | 837                        | 602   | 163              | 41    | 9   | 87              | S. ATLANTIC           | 1, 391      | 823   | 378   | 97    | 50     | 72              |
| Boston, Mass.                        | 236                        | 159   | 51               | 14    | э   | 26              | Atlanta, Ga.          | 192         | 116   | 44    | 20    | 3      | 2               |
| Bridgeport, Conn.                    | 40                         | 10    | 11               | 1     | _   | 2               | Baltimore, Md.        | 203         | 49    | 18    | 4     | -      | 5               |
| Camoridge, Mass.<br>Fall River Mass  | 45                         | 32    | Ā                | 2     | -   | -               | Jacksonville, Fla.    | - iii       | 60    | 26    | 4     | 8      | 2               |
| Hartford, Conn.                      | 81                         | 57    | 14               | 6     | 3   | 6               | Miami, Fla.           | 114         | 68    | 28    | 6     | 11     | - 4             |
| Lowell, Mass.                        | 39                         | 25    | 8                | 5     | -   | 4               | Norfolk, Va.          | 90          | 54    | 21    | 6     | 7      | 7               |
| Lynn, Mass.                          | 35                         | 30    | 3                | 1     | 1   | 7               | Richmond, Va.         | 113         | 66    | 33    | 8     |        | 8               |
| New Bedford, Mass.                   | 31                         | 26    | 12               | 1     | 1   |                 | Savannan, Ga.         | 212         | 23    | 16    | 3     | 1      | 8               |
| New Haven, Conn.11<br>Providence B I | 72                         | 49    | 21               | 1     | -   | 2<br>Q          | Tampa Fla.            | 84          | 52    | 27    | 2     | î      | 8               |
| Somerville, Mass.                    | 10                         | 8     | 2                | -     | -   | í               | Washington, D.C.      | 197         | 87    | 73    | 22    | 5      | 11              |
| Springfield, Mass.                   | 50                         | 41    | 6                | 3     | -   | 9               | Wilmington, Del.      | 55          | 35    | 14    | 3     | -      | 3               |
| Waterbury, Conn.                     | 45                         | 32    | 11               | 1     | -   | 6               |                       |             |       |       |       |        |                 |
| Worcester, Mass.                     | 61                         | 49    | 9                | 2     | -   | 8               | C.C. CENTRAL          | 740         | 4 6 5 | 185   | 50    | 18     | 46              |
|                                      |                            |       |                  |       |     |                 | Birmingham Ala        | 103         | 65    | 25    | 30    | -      | 1               |
| MID. ATLANTIC                        | 2.885                      | 1,960 | 652              | 146   | 69  | 171             | Chattangooa, Tenn.    | 74          | 51    | 12    | 4     | 6      | 5               |
| Albany, N.Y.                         | 63                         | 44    | 10               | - 4   | 3   | -               | Knoxville, Tenn.      | 45          | 33    | 12    | -     | -      | 1               |
| Allentown, Pa.                       | 24                         | 18    | 5                | -     | -   | -               | Louisville, Ky.       | 135         | 80    | 36    | 10    | 4      | 23              |
| Buffalo, N.Y.                        | 1 32                       | 91    | 29               | 6     | 4   | 19              | Memphis, Tenn.        | 175         | 110   | 47    |       | L      | 2               |
| Camden, N.J.                         | 46                         | 33    | 10               | 3     | -   | 5               | Mobile, Ala.          | 34          | 42    | 23    | 12    | - ii - |                 |
| Elizabeth, N.J.<br>Eria Pat          | 37                         | 24    | 2                | 2     | 2   | 2               | Nontgomery, Ala.      | 92          | 58    | 21    | 5     | 6      | ā               |
| Jersey City N.J.                     | 46                         | 33    | q                | ĩ     | 3   |                 |                       | ~           |       |       |       |        |                 |
| Newark, N.J.                         | 62                         | 33    | 16               | 6     | - 4 | 5               |                       |             |       |       |       |        |                 |
| N.Y. City, N.Y.                      | 1,578                      | 1.063 | 360              | 91    | 33  | 76              | W.S. CENTRAL          | 1, 144      | 698   | 265   | 69    | 59     | 56              |
| Paterson, N.J.                       | 37                         | 19    | 8                | 2     | 6   | 3               | Austin, Tex.          | 63          | 43    | 13    | 3     | 3      | 6               |
| Philadelphia, Pa. T                  | 287                        | 185   | 70               | 15    | а   | 14              | Baton Rouge, La.      | 59          | 40    | 1.4   | 2     | ÷.     | 1               |
| Pittsburgh, Pa. 1<br>Reading, Pa     | 89                         | 20    | 31               | 2     | -   |                 | Corpus Christi, Tex.  | 209         | 112   | 58    | 19    | ģ      | 3               |
| Rochester, N.Y.                      | 129                        | 105   | 20               | 2     | 1   | 16              | El Paso Tex           | 51          | 30    | 13    | 2     | _      | 5               |
| Schenectady, N.Y.                    | 28                         | 19    | - 7              | -     | ī   | 1               | Fort Worth, Tex.      | 88          | 56    | 22    | 3     | 5      | 9               |
| Scranton, Pa.1                       | 56                         | 42    | 13               | -     | 1   | 6               | Houston, Tex.         | 125         | 56    | 36    | 8     | 17     | 2               |
| Syracuse, N.Y.                       | 99                         | 67    | 25               | 3     | 2   | 4               | Little Rock, Ark.     | 66          | 40    | 17    | 5     | 3      | 8               |
| Trenton, N.J.                        | 43                         | 29    | 12               | 2     | -   | 3               | New Orleans, La.      | 137         | 87    | 26    | 10    |        | -               |
| Yonkers, N.Y.                        | 29                         | 24    | *                | 1     | _   | 2               | San Antonio, Tex.     | 51          | 29    | 13    | 10    | 7      | 2               |
|                                      |                            |       |                  | -     |     | -               | Tulsa, Okla           | 92          | 70    | 12    | 4     | 4      | 10              |
| EN CENTRAL                           | 2,602                      | 1,636 | 628              | 164   | 90  | 124             |                       |             |       |       |       |        |                 |
| Akron, Ohio                          | 70                         | 52    | 9                | 4     | 3   | -               | MOUNTAIN              | 629         | 376   | 169   | 36    | 20     | 34              |
| Canton, Ohio                         | 57                         | 40    | 12               | z     | -   | 3               | Albuquerque, N. Mex.  | 51          | 37    | 8     | 3     | 1      | 8               |
| Chicago, III.                        | 616                        | 388   | 146              | 39    | 18  | 20              | Colo. Springs, Colo.  | 38          | 23    | 11    |       | -      | 2               |
| Cincinnati, Ohio                     | 162                        | 90    | 42               | 10    | 10  | 14              | Denver, Colo.         | 100         | 30    | 22    | ġ     |        | 3               |
| Celumbur, Ohio                       | 178                        | 109   | 47               | â     | - ğ | 15              | Orden Utah            | 24          | 20    | 3     | -     | -      | - 4             |
| Davton Ohio                          | 120                        | 74    | 36               | 5     | 1   | 7               | Phoenix, Ariz.        | 150         | 91    | 45    | = 5   | 4      | 3               |
| Detroit, Mich.                       | 306                        | 169   | 95               | 18    | 12  | 4               | Pueblo, Colo.         | 17          | 14    | -     | -     | 2      | 4               |
| Evansville, Ind.                     | 50                         | 40    | 6                | 2     | 1   | 6               | Salt Lake City, Utah  | 59          | 32    | 15    | 2     | 7      | 1               |
| Fort Wayne, Ind.                     | 60                         | . 44  | 9                | 5     | -   | ?               | Tucson, Ariz.         | 118         | 10    | 22    | 2     | ~      | -               |
| Gary, Ind.                           | 28                         | 10    |                  | 1     | ;   | 5               |                       |             |       |       |       |        |                 |
| Grand Hapids, Mich.                  | 183                        | 114   | 41               | 15    | Â   | 1               | PACIFIC               | 2.005       | 1.313 | 438   | 114   | 69     | 90              |
| Madison, Wis.                        | 40                         | 25    | 6                | ŝ     | 5   | ĩ               | Berkeley, Calif.      | 15          | 13    | - L   | 1     | -      | 1               |
| Milwaukee, Wis.                      | 1 54                       | 109   | 35               | 7     | 2   | 4               | Fresno, Calif.        | 64          | 41    | 14    | 3     | 1      | 8               |
| Peoria, III.                         | 38                         | 17    | 16               | 3     | 2   | 2               | Glendale, Calif.      | 32          | 26    |       | 1.7   | -      | 1               |
| Rockford, III.                       | 45                         | 24    | 13               | 5     | 1   | 5               | Honolulu, Hawaii      | 57          | 31    | 10    | 2     |        | 2               |
| South Bend, Ind.                     | 08                         |       | 21               | 2     | 6   | 19              | Long Beach, Calif.    | 651         | 470   | 139   | 44    | 22     | 23              |
| Youngstown Ohio                      | 53                         | 37    | 11               | í     | 3   | 2               | Oakland, Calif.       | 91          | 52    | 16    | 10    | 7      | 7               |
| Congrown, one                        |                            |       |                  |       |     |                 | Pasadena, Calif.      | 36          | 28    | 6     | 1     | -      | 4               |
|                                      |                            |       |                  |       |     |                 | Portland, Oreg.       | 162         | 116   | 33    | 4     | 5      | 5               |
| W.N. CENTRAL                         | 766                        | 541   | 151              | 24    | 30  | 44              | Sacramento, Calif.    | 89          | 57    | 24    | 4     | 3      | 3               |
| Des Moines, Iowa                     | 70                         | 42    | 19               | 2     | 2   | 5               | San Diego, Calif.     | 138         | 90    | 27    |       |        | 2               |
| Duluth, Minn.                        | 20                         | 13    | 6                | 1     | 2   | -               | San Francisco, Calif. | 108         | 103   | 34    | 1     | - 5    | Å               |
| Kansas City, Kans.                   | 125                        | 20    | 31               | 2     | 4   | 2               | Sattle Wash           | 166         |       | 31    | 10    | 3      | 5               |
| Lincoln, Nebr.                       | 35                         | 29    | - <sup>2</sup> 3 | 2     | i   | 5               | Spokane, Wash.        | 52          | 39    | 12    |       | -      | 7               |
| Minneapolis, Minn.                   | 118                        | 93    | 14               | 3     | 7   | 6               | Tacoma, Wash.         | 43          | 30    | 10    | 1     | 2      | 3               |
| Omaha, Nebr                          | 92                         | 66    | 20               | -     | Э   | 4               |                       |             |       |       |       |        |                 |
| St. Louis, Mo.                       | 143                        | 105   | 30               | 3     | 3   | 5               |                       |             |       |       |       |        |                 |
| St. Paul, Minn.                      | 66                         | 55    | 8                | 2     | 2   | 5               | TOTAL                 | 13,009      | 8.414 | 3,029 | 741   | 414    | 124             |
| Wichita, Kans.                       | 60                         | 40    | 11               | 3     | 3   | 5               |                       |             |       |       |       |        |                 |

\*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included. \*\*Pneumonia and influenza

tBecause of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

ttData not available this week. Figures are estimates based on average percent of regional total.

# Formula-Associated Illness - Continued

So far as CDC is aware, none of the children who had the alkalosis show signs of profound or severe developmental disability.

However, in order to detect any developmental problems that might be associated with the severe chloride deficiency, CDC is collaborating with the National Institutes of Health in a follow-up study of infants who consumed chloride-deficient Neo-Mull-Soy or CHO-free and who developed metabolic alkalosis. Anyone needing further information on problems associated with the use of these soy-based formulas should contact his or her pediatrician.

Reported by Chronic Diseases Div, Bur of Epidemiology, CDC. References 1. MMWR 1979:28:358-9.

2. MMWR 1979;28:364.

# Current Trends

# Availability of Immunobiologic Agents and Antiparasitic Drugs from CDC

CDC distributes 4 special immunobiologic agents and 13 drugs for parasitic diseases through the Immunobiologics Services, Biologic Products Division, Bureau of Laboratories, and through the Parasitic Diseases Division and the Quarantine Division, Bureau of Epidemiology (Tables 1 and 2). CDC will dispense an immunobiologic agent or drug to a requesting physician for administration to a patient whose situation or condition calls for

| TABLE 1. Products available at C | DC quarantine station | s and telephone | e numbers to call |
|----------------------------------|-----------------------|-----------------|-------------------|
| to order, January 1980           |                       |                 |                   |
|                                  |                       |                 |                   |

| Product  | Telephone number  |   |  |  |  |  |  |
|--|---|---|--|--|--|--|--|
|  | Monday-Friday<br>8 AM to 4:30 PM                            | After working hours holidays and weekends |  |  |  |  |  |
| Botulinal equine antitoxin (ABE)                     | (404) 329-3753  | (404) 329-3644                            |  |  |  |  |  |
| Diphtheria equine antitoxin                          | (404) 329-3687  | (404) 329-3644                            |  |  |  |  |  |
| Vaccinia immune globulin (VIG)                       | (404) 329-2562  | (404) 329-3644                            |  |  |  |  |  |
| Varicella-zoster immune<br>globulin (VZIG)           | (617) 732-3121<br>Sidney Farber Cancer<br>Institute, Boston | (617) 732-3121<br>or<br>(617) 237-6649    |  |  |  |  |  |
| Pentamidine isethionate<br>and other parasitic drugs | (404) 329-3670  | (404) 329-3644                            |  |  |  |  |  |

Immunobiologic Agents and Antiparasitic Drugs – Continued

| Drugs  | Indications                                |
|--|--|
| Pentamidine isethionate<br>(Lomidine)            | Pneumocystosis, African<br>trypanosomiasis |
| Niclosamide (Yomesan)                            | Cestodiasis                                |
| Sodium antimony gluconate<br>(Pentostam)         | Leishmaniasis                              |
| Suramin (Bayer 205)                              | African trypanosomiasis,<br>Onchocerciasis |
| Melarsoprol (Mel B)                              | African trypanosomiasis                    |
| Bayer 2502 (Lampit)                              | American trypanosomiasis                   |
| Diloxanide furoate (Furamide)                    | Amebiasis                                  |
| Dehydroemetine                                   | Amebiasis                                  |
| Bithionol, N.F.                                  | Paragonimiasis                             |
| Sodium antimony dimercaptosuccinate<br>(Astiban) | Schistosomiasis                            |
| Metrifonate (Bilarcil)                           | Schistosomiasis                            |
| Quinine dihydrochloride<br>(parenteral)          | Pernicious malaria                         |
| Chloroquine hydrochloride<br>(parenteral)        | Pernicious malaria                         |

### TABLE 2. Drugs for parasitic diseases available from CDC

its use. Appropriate information regarding indications/contraindications, dosages, routes and frequency of administration, expected adverse reactions, toxicity, and other general data are included in the package inserts with all licensed products.

In addition to the supplies of immunobiologics and drugs maintained at CDC in Atlanta, emergency supplies of 5 products are available at CDC quarantine stations located at airports in 10 major U.S. cities.\* These 5 products are botulinal equine antitoxin (ABE), diphtheria equine antitoxin, vaccinia immune globulin (VIG), pentamindine isethionate, and varicella-zoster immune globulin (VZIG). These products can be requested by calling CDC or, in the case of VZIG, the Sidney Farber Cancer Institute (Table 1).

Non-emergency requests for immunobiologics such as anthrax vaccine, botulinal toxoid, eastern equine encephalitis vaccine, tularemia vaccine, and Venezuelan equine encephalitis vaccine may be made by writing or calling Immunobiologics Services, Biological Products Division, Monday through Friday 8 AM to 4:30 PM (eastern time) at (404) 329-3356; and for drugs for parasitic diseases by writing or calling Parasitic Diseases Drug Service, Parasitic Diseases Division, Monday through Friday 8 AM to 4:30 PM (eastern time) at (404) 329-3356; and for drugs for parasitic diseases by writing or calling Parasitic Diseases Drug Service, Parasitic Diseases Division, Monday through Friday 8 AM to 4:30 PM (eastern time) at (404) 329-3670.

<sup>\*</sup>Although CDC should be contacted first, the names of these cities are Boston, Massachusetts; New York City, New York; Houston, Texas; Seattle, Washington; Washington, D.C.; Los Angeles, California; San Francisco, California; Miami, Florida; Chicago, Illinois; and New Orleans, Louisiana.

# Influenza – United States

For the week ending March 8, 2 states (Pennsylvania and Nebraska) reported widespread outbreaks of influenza to CDC. Six states (Connecticut, Maine, Virginia, North Carolina, Tennessee, and South Dakota) reported regional outbreaks, and 18 states reported sporadic influenza cases. Influenza B viruses continue to predominate.

For the eighth consecutive week the number of pneumonia and influenza (P&I) deaths reported from 117 U.S. cities remained above the epidemic threshold. For the week ending March 15th, P&I deaths increased from the previous week's total.

Reported by State Epidemiologists; Immunization Div, Bur of State Services, Consolidated Surveillance and Communications Activity, Bur of Epidemiology, CDC.

International Notes

# **Quarantine Measures**

The following changes should be made in the Supplement, "Health Information for International Travel," MMWR, Vol. 28, July 1979:

#### AMERICAN SAMOA

Yellow fever - Delete: None. Insert code II > 1 yr. ALSO on page 10 delete: None. Insert code II.

### AUSTRALIA

Yellow fever - Under code insert > 1 yr. Smallpox - Delete all information. Insert: None. ALSO on page 10 delete code. Insert: None.

#### BANGLADESH

Yellow fever - Africa: Delete: Central African Empire. Insert: Central African Republic. Smallpox - Delete all information. Insert: A certificate is required ONLY from travelers (except tourists) leaving Bangladesh. ALSO on page 10 delete code. Insert\*.

INSERT: BHUTAN. ALSO insert on page 10.

Cholera - None. Yellow fever - None. Smallpox - None.

### BOTSWANA

Yellow fever - Under code insert > 1 yr. Smallpox - Delete all information. Insert: None. ALSO on page 10 delete code. Insert: None.

### BURUNDI

Yellow fever - Delete note. ALSO on page 11 delete \*. Smallpox - Delete all information. Insert: None. ALSO on page 11 delete code. Insert: None.

### **CENTRAL AFRICAN EMPIRE**

Change name to CENTRAL AFRICAN REPUBLIC. ALSO on page 11 change name to Central African Republic.

Smallpox - Delete code. Insert: None. ALSO on page 11 delete code. Insert: None.

The Morbidity and Mortality Weekly Report, circulation 96,486, is published by the Center for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Send reports to: Center for Disease Control, Attn: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

Send mailing list additions, deletions, and address changes to: Center for Disease Control, Attn: Distribution Services, GSO, 1-SB-36, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

### Quarantine Measures - Continued

### CHINA, PEOPLE'S REPUBLIC OF

Cholera - Delete all information. Insert: None. ALSO on page 11 delete code. Insert: None. Yellow fever - Delete note. ALSO on page 11 delete \* by code.

Smallpox - Delete all information. Insert: None. ALSO on page 11 delete code. Insert: None.

### CHINA, REPUBLIC OF (TAIWAN)

Insert note: No official information has been received. These recommendations are made.

Cholera - ALSO on page 11 insert \* by code. Yellow fever - ALSO on page 11 insert \* after None.

Smallpox - Delete code. Insert: None. ALSO on page 11 delete code. Insert: None \*.

### CHRISTMAS ISLAND (Indian Ocean)

Yellow fever - Under code insert > 1 yr.

Smallpox - Delete all information. Insert: None. ALSO on page 11 delete code. Insert: None.

### COOK ISLANDS

Cholera - Delete: None. Insert code II. ALSO on page 11 delete: None. Insert code II. Smallpox - Delete all information. Insert: None. ALSO on page 11 delete code. Insert: None.

#### CUBA

Yellow fever - Africa: Delete Central African Empire, Insert: Central African Republic. Smallpox - Delete all information. Insert: None. ALSO on page 11 delete code. Insert: None.

### EQUADOR

Smallpox - Delete code. Insert: A certificate is required ONLY from travelers arriving from: Africa: Ethiopia, Somalia (isolated areas)

ALSO on page 12 delete code. Insert \*.

### EGYPT

Yellow fever - Africa: Delete Central African Empire. Insert Central African Republic. Smallpox - Delete all information. Insert: None. ALSO on page 12 delete code. Insert: None.

FIJ

Cholera - Delete code. Insert: None. ALSO on page 12 delete code. Insert: None. Smallpox - Delete all information. ALSO on page 12 delete code. Insert: None.

### GABON

Yellow fever - Change code to II. ALSO on page 12 change code to II. Smallpox - Delete all information. Insert: None. ALSO on page 12 delete code. Insert: None.

#### GAMBIA

Yellow fever - Delete all information. Insert code I. ALSO on page 12 change code to I. Smallpox - Delete all information. Insert: None. ALSO on page 12 delete code. Insert: None.

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