



Morbidity and Mortality

Vol. 16, No. 32

WEEKLY REPORT

Week Ending August 12, 1967

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL

CURRENT TRENDS
MEASLES

A total of 222 cases of measles was reported for the week ending August 12, 1967, revealing the steady seasonal decline expected in the summer. The 4-week total (weeks 29-32) of 1,153 cases is 26.4 percent of the total of 4,370 cases for the comparable period last year which in itself was a record low incidence.

Figure 1 presents incidence by 4-week periods for the second half of 1964, 1965, 1966, with current totals for 1967. During the past 3 years, the lowest incidence of reported cases has occurred in September, followed by a steady rise beginning in October. In 1964 and 1965, the frequencies of reported cases rose at the same rate, but in 1966 the rise was distinctly less marked. In the summer of 1967 the reported incidence has been less than one third of that in comparable weeks of 1966.

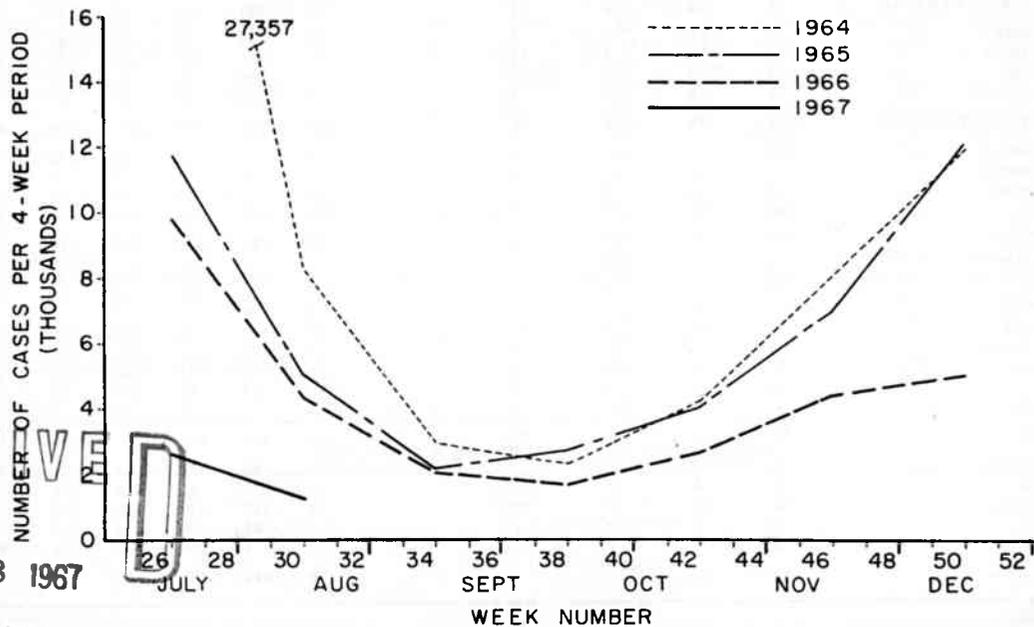
The numbers of reported cases for the nine geographic divisions and for each state for the past 4 weeks are

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shown in Table 1, along with 4-week totals for comparable periods in 1962-66. Low current incidence is notable throughout the country. In all divisions the frequency of reported measles is less than half that of 1966 and much less than that of previous years. Moderate numbers of cases are still being reported in California, Illinois, North Dakota, Tennessee, Texas, Virginia, and Wisconsin. In many of these states reporting of measles has been traditionally more complete than in other areas. In most states efforts to improve reporting have been intensified.

Figure 1
REPORTED CASES OF MEASLES IN THE UNITED STATES
FOUR-WEEK TOTALS - JULY - DECEMBER, 1964 - 1967



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Table 1
Reported Cases of Measles, United States
Four Weeks Ending July 22 to August 12, 1967
With 4-Week Totals for Comparable Period 1962-66

| Geographic Divisions and States | Week Ending | | | | 4-Week Totals | | | | | |
|---------------------------------|-------------|---------|----------|-----------|---------------|-------|-------|-------|-------|--------|
| | July 22 | July 29 | August 5 | August 12 | 1967 | 1966 | 1965 | 1964 | 1963 | 1962 |
| UNITED STATES | 357 | 286 | 288 | 222 | 1,153 | 4,370 | 5,148 | 8,332 | 9,437 | 10,065 |
| NEW ENGLAND | 8 | 6 | 4 | 12 | 30 | 62 | 208 | 818 | 398 | 920 |
| Maine | — | — | 1 | — | 1 | 2 | 28 | 187 | 29 | 137 |
| New Hampshire | 2 | — | — | — | 2 | 13 | 3 | 10 | 8 | 1 |
| Vermont | — | — | — | — | — | 6 | 15 | 66 | 57 | 47 |
| Massachusetts | 4 | 4 | 3 | 11 | 22 | 17 | 107 | 372 | 163 | 488 |
| Rhode Island | — | 2 | — | — | 2 | — | 15 | 94 | 29 | 73 |
| Connecticut | 2 | — | — | 1 | 3 | 24 | 40 | 89 | 112 | 174 |
| MIDDLE ATLANTIC | 21 | 11 | 18 | 19 | 69 | 205 | 609 | 927 | 1,841 | 1,876 |
| New York City | 6 | 4 | 8 | 7 | 25 | 58 | 224 | 237 | 1,165 | 1,156 |
| New York Upstate | 15 | 5 | 6 | 8 | 34 | 118 | 130 | 467 | — | — |
| New Jersey | — | 1 | 1 | 1 | 3 | 11 | 162 | 167 | 348 | 520 |
| Pennsylvania | — | 1 | 3 | 3 | 7 | 18 | 93 | 56 | 328 | 200 |
| EAST NORTH CENTRAL | 36 | 60 | 65 | 35 | 196 | 1,427 | 2,034 | 1,955 | 2,484 | 2,339 |
| Ohio | 2 | 7 | 2 | 3 | 14 | 98 | 128 | 278 | 518 | 229 |
| Indiana | 5 | 1 | 2 | — | 8 | 72 | 90 | 235 | 136 | 136 |
| Illinois | 3 | 25 | 16 | 7 | 51 | 68 | 184 | 588 | 256 | 256 |
| Michigan | 7 | 1 | 18 | 5 | 31 | 754 | 860 | 487 | 961 | 1,032 |
| Wisconsin | 19 | 26 | 27 | 20 | 92 | 435 | 972 | 367 | 613 | 686 |
| WEST NORTH CENTRAL | 20 | 11 | 9 | 8 | 48 | 135 | 161 | 255 | 226 | 230 |
| Minnesota | — | 2 | 1 | — | 3 | 18 | 8 | 5 | 12 | 36 |
| Iowa | 5 | — | — | 1 | 6 | 73 | 34 | 117 | 87 | 62 |
| Missouri | 1 | — | 1 | 1 | 3 | 6 | 28 | 6 | 42 | 29 |
| North Dakota | 11 | 9 | 6 | 5 | 31 | 38 | 88 | 115 | 79 | 91 |
| South Dakota | — | — | — | — | — | — | 3 | 12 | 5 | 12 |
| Nebraska | 3 | — | 1 | 1 | 5 | — | — | — | 1 | — |
| Kansas | — | — | — | — | — | NN | NN | NN | NN | NN |
| SOUTH ATLANTIC | 57 | 47 | 53 | 22 | 179 | 608 | 471 | 579 | 876 | 923 |
| Delaware | — | — | — | — | — | 6 | 3 | 26 | 30 | 240 |
| Maryland | 3 | 1 | 1 | 2 | 7 | 25 | 67 | 25 | 142 | 67 |
| District of Columbia | — | — | — | — | — | 3 | 4 | 1 | 2 | 5 |
| Virginia | 24 | 31 | 38 | 8 | 101 | 159 | 78 | 130 | 187 | 210 |
| West Virginia | 8 | 4 | 9 | 7 | 28 | 165 | 243 | 217 | 289 | 231 |
| North Carolina | 1 | 2 | 1 | 1 | 5 | 64 | 9 | 15 | 34 | 17 |
| South Carolina | 12 | 2 | 1 | — | 15 | 12 | 14 | 18 | 32 | 16 |
| Georgia | — | — | — | — | — | 2 | 8 | 24 | 14 | 2 |
| Florida | 9 | 7 | 3 | 4 | 23 | 172 | 45 | 123 | 146 | 135 |
| EAST SOUTH CENTRAL | 45 | 29 | 16 | 14 | 104 | 365 | 219 | 722 | 540 | 450 |
| Kentucky | 9 | 17 | — | 1 | 27 | 40 | 21 | 177 | 299 | 65 |
| Tennessee | 29 | 9 | 8 | 11 | 57 | 261 | 127 | 364 | 198 | 337 |
| Alabama | 4 | 2 | 7 | — | 13 | 41 | 41 | 158 | 22 | 27 |
| Mississippi | 3 | 1 | 1 | 2 | 7 | 23 | 30 | 23 | 21 | 21 |
| WEST SOUTH CENTRAL | 75 | 34 | 63 | 52 | 224 | 691 | 447 | 1,004 | 749 | 643 |
| Arkansas | 3 | — | — | — | 3 | — | 1 | 54 | 203 | 1 |
| Louisiana | — | 1 | 1 | — | 2 | 7 | 12 | 3 | 4 | 9 |
| Oklahoma | 6 | — | 5 | — | 11 | 7 | 2 | 32 | 26 | 7 |
| Texas | 66 | 33 | 57 | 52 | 208 | 677 | 432 | 915 | 516 | 626 |
| MOUNTAIN | 40 | 28 | 19 | 22 | 109 | 337 | 474 | 762 | 796 | 1,035 |
| Montana | — | 2 | — | — | 2 | 12 | 77 | 206 | 115 | 234 |
| Idaho | 6 | — | 1 | — | 7 | 77 | 103 | 86 | 97 | 106 |
| Wyoming | — | — | 1 | 1 | 2 | 2 | 7 | 5 | 2 | 10 |
| Colorado | 10 | 21 | 4 | 12 | 47 | 97 | 113 | 102 | 197 | 320 |
| New Mexico | 2 | — | 2 | 1 | 5 | 22 | 17 | 51 | NN | NN |
| Arizona | 10 | 4 | 10 | 8 | 32 | 72 | 91 | 160 | 287 | 236 |
| Utah | 12 | 1 | 1 | — | 14 | 55 | 65 | 138 | 95 | 127 |
| Nevada | — | — | — | — | — | — | 1 | 14 | 3 | 2 |
| PACIFIC | 55 | 60 | 41 | 38 | 194 | 540 | 525 | 1,310 | 1,527 | 1,649 |
| Washington | 7 | 9 | 7 | 7 | 30 | 50 | 28 | 49 | 111 | 136 |
| Oregon | 8 | 16 | 9 | 15 | 48 | 118 | 53 | 369 | 146 | 300 |
| California | 33 | 32 | 16 | 15 | 96 | 287 | 249 | 813 | 942 | 786 |
| Alaska | 2 | — | 2 | 1 | 5 | 81 | 28 | 12 | 220 | 67 |
| Hawaii | 5 | 3 | 7 | — | 15 | 4 | 167 | 67 | 108 | 360 |
| Puerto Rico | 34 | 10 | 25 | 3 | 72 | 181 | 129 | 360 | 32 | 177 |

EPIDEMIOLOGIC NOTES AND REPORTS
GASTROENTERITIS

Of approximately 140 nurses who attended a one-day meeting in Duluth, Minnesota, on May 27, 1967, 56 are known to have had gastroenteritis following the noon luncheon. Onset of symptoms occurred from 6 to 31 hours after the meal, with the mean incubation period being 14 hours. The diarrhea and severe intestinal cramps lasted for a few hours to 1-1/2 days. No stool cultures were obtained from the nurses.

Detailed health history and food records were obtained from 110 of the nurses who had been at the meeting. As shown in Table 2, the attack rates of the nurses who ate or did not eat specific items on the menu seem to implicate the chicken salad.

A sample of leftover chicken salad served at the luncheon was obtained from the caterer on May 29 and submitted to the Minnesota Department of Health Laboratory for bacteriologic examination. The total plate count showed 5 million organisms per gram of sample. Anaerobic culture showed *Clostridium perfringens*. Other food samples submitted were negative for pathogens.

According to the caterer, the chicken salad was prepared the morning of May 27 from precooked, diced, frozen chicken. The caterer had in his establishment an unopened

Table 2
Attack Rates of Gastroenteritis in Nurses
Duluth, Minnesota - May 27, 1967

| | Ate | | | Did not eat | | | | |
|---------------------------------|-----|---------|-------|-------------|-----|---------|-------|-------------|
| | Ill | Not Ill | Total | Attack Rate | Ill | Not Ill | Total | Attack Rate |
| Chicken salad | 56 | 39 | 95 | 58% | 0 | 3 | 3 | 0% |
| Pickled peach with cream cheese | 48 | 35 | 83 | 58% | 5 | 4 | 9 | 55% |
| Hard-boiled egg | 47 | 36 | 83 | 57% | 7 | 4 | 11 | 63% |
| Lemon chiffon dessert | 51 | 35 | 86 | 59% | 3 | 5 | 8 | 37% |

25-pound box of diced chicken purchased from the same company at the same time as the meat used in the salad. Laboratory examination of a sample from this box indicated that the total plate count was one million organisms per gram; however, anaerobic culture failed to grow any *Clostridium* organisms.

(Reported by Dr. A. J. Houghlum, Deputy Health Officer, St. Louis County Health Department, Duluth, Minnesota; and Dr. D. S. Fleming, Director, Division of Disease Prevention and Control, Minnesota Department of Health.)

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

| DISEASE | 32nd WEEK ENDED | | MEDIAN 1962 - 1966 | CUMULATIVE, FIRST 32 WEEKS | | |
|---|--------------------|--------------------|-----------------------|----------------------------|---------|-----------------------|
| | AUGUST 12, 1967 | AUGUST 13, 1966 | | 1967 | 1966 | MEDIAN 1962 - 1966 |
| Aseptic meningitis | 100 | 81 | 60 | 1,279 | 1,185 | 1,026 |
| Brucellosis | 3 | 7 | 8 | 163 | 138 | 226 |
| Diphtheria | 1 | 9 | 1 | 62 | 108 | 152 |
| Encephalitis, primary: | | | | | | |
| Arthropod-borne & unspecified | 53 | 39 | --- | 880 | 880 | --- |
| Encephalitis, post-infectious | 28 | 9 | --- | 583 | 542 | --- |
| Hepatitis, serum | 42 | 29 | 587 | 1,293 | 844 | 24,826 |
| Hepatitis, infectious | 646 | 523 | | 23,533 | 20,081 | |
| Malaria | 28 | 11 | 3 | 1,212 | 203 | 53 |
| Measles (rubeola) | 222 | 790 | 1,415 | 56,846 | 186,980 | 354,163 |
| Meningococcal infections, total | 16 | 43 | 34 | 1,581 | 2,568 | 1,832 |
| Civilian | 15 | 43 | --- | 1,472 | 2,304 | --- |
| Military | 1 | — | --- | 109 | 264 | --- |
| Poliomyelitis, total | 1 | 4 | 4 | 20 | 59 | 64 |
| Paralytic | 1 | 4 | 4 | 17 | 55 | 55 |
| Rubella (German measles) | 187 | 302 | --- | 39,036 | 40,688 | --- |
| Streptococcal sore throat & scarlet fever | 4,709 | 4,249 | 3,855 | 305,746 | 290,485 | 269,548 |
| Tetanus | 7 | 2 | 8 | 131 | 100 | 155 |
| Tularemia | 7 | 8 | 8 | 109 | 102 | 175 |
| Typhoid fever | 9 | 10 | 13 | 242 | 216 | 244 |
| Typhus, tick-borne (Rky. Mt. spotted fever) | 18 | 12 | 12 | 178 | 162 | 152 |
| Rabies in animals | 80 | 77 | 62 | 2,809 | 2,679 | 2,679 |

NOTIFIABLE DISEASES OF LOW FREQUENCY

| | Cum. | | Cum. |
|-------------------------|------|-------------------------------|------|
| Anthrax: | 2 | Rabies in man: | 2 |
| Botulism: | 2 | Rubella, Congenital Syndrome: | 4 |
| Leptospirosis: Calif.-2 | 24 | Trichinosis: | 45 |
| Plague: | 2 | Typhus, murine: | 28 |
| Psittacosis: | 31 | Polio, Unsp. | 3 |

BAT RABIES - Michigan

On May 26, a bat flew into a home in Lansing, Michigan, at 4 a.m. and bit a 2-year-old girl on the neck. The child was sleeping in her crib in an upstairs room when the bat apparently gained entrance through an open, screenless window of an adjacent room. Her 16-year-old brother brushed the bat from her neck with a blanket and killed it. The child was taken to a Lansing hospital emergency room for examination and treatment. Upon the recommendation of the family doctor, the bat was recovered the same morning and taken to the Michigan Department of Public Health laboratory where brain material was found positive for rabies. Rabies treatment initiated that same day consisted of 14 daily doses phenolized rabbit brain origin "Semple" vaccine followed by seven daily doses of duck embryo origin vaccine. After the 21st day the child appeared to have no known significant vaccination reaction.

In June, a resident of Williamston noticed his 3-month-old puppy barking at a bat on the ground flapping its wings. The bat was killed and sent to the Michigan Department of Public Health laboratory where it was diagnosed as rabid. There were no known human exposures from this bat. The puppy was destroyed since it had had no previous rabies immunization and exposure could not be determined.

In both of these cases the bats were identified as the Large Brown Bat, *Eptesicus fuscus*, an insect-eating bat common to most parts of the United States.

These two cases are the first instances of bat rabies reported from Ingham County. Since 1956, a total of 27 cases of rabies in bats has been recorded in Michigan.

(Reported by Dr. Dean S. Tribby, Public Health Veterinarian, Ingham County Health Department.)

SUMMARY OF REPORTED CASES OF INFECTIOUS SYPHILIS
JULY 1967 AND JULY 1966

CASES OF PRIMARY AND SECONDARY SYPHILIS: BY REPORTING AREAS JULY, 1967 AND JULY, 1966 - PROVISIONAL DATA

| Reporting Area | JULY | | Cumulative JAN-JULY | | Reporting Area | JULY | | Cumulative JAN-JULY | |
|---------------------------|------|------|------------------------|-------|--|-------|-------|------------------------|--------|
| | 1967 | 1966 | 1967 | 1966 | | 1967 | 1966 | 1967 | 1966 |
| NEW ENGLAND..... | 22 | 30 | 203 | 272 | EAST SOUTH CENTRAL..... | 132 | 204 | 1,048 | 1,329 |
| Maine..... | 2 | 2 | 2 | 5 | Kentucky..... | 13 | 13 | 87 | 76 |
| New Hampshire..... | - | 2 | 5 | 7 | Tennessee..... | 36 | 36 | 166 | 176 |
| Vermont..... | - | - | 2 | 1 | Alabama..... | 50 | 112 | 561 | 739 |
| Massachusetts..... | 8 | 21 | 120 | 188 | Mississippi..... | 33 | 43 | 234 | 338 |
| Rhode Island..... | 5 | 1 | 22 | 18 | WEST SOUTH CENTRAL..... | 289 | 221 | 1,850 | 1,506 |
| Connecticut..... | 7 | 4 | 52 | 53 | Arkansas..... | 9 | 13 | 84 | 85 |
| MIDDLE ATLANTIC..... | 256 | 273 | 1,994 | 2,348 | Louisiana..... | 48 | 49 | 356 | 361 |
| Upstate New York..... | 24 | 22 | 163 | 212 | Oklahoma..... | 9 | 13 | 75 | 84 |
| New York City..... | 142 | 153 | 1,177 | 1,464 | Texas..... | 223 | 146 | 1,335 | 976 |
| Pa. (Excl. Phila.)..... | 13 | 8 | 136 | 107 | MOUNTAIN..... | 52 | 34 | 355 | 235 |
| Philadelphia..... | 32 | 23 | 163 | 151 | Montana..... | - | 1 | 4 | 23 |
| New Jersey..... | 45 | 67 | 355 | 414 | Idaho..... | 3 | - | 16 | 1 |
| EAST NORTH CENTRAL..... | 240 | 232 | 1,828 | 1,813 | Wyoming..... | 2 | - | 12 | - |
| Ohio..... | 57 | 51 | 371 | 345 | Colorado..... | 5 | 4 | 43 | 29 |
| Indiana..... | 13 | 9 | 86 | 54 | New Mexico..... | 14 | 8 | 96 | 53 |
| Downstate Illinois..... | 8 | 12 | 96 | 109 | Arizona..... | 27 | 18 | 170 | 110 |
| Chicago..... | 56 | 75 | 529 | 588 | Utah..... | - | - | 5 | 5 |
| Michigan..... | 106 | 74 | 730 | 650 | Nevada..... | 1 | 3 | 9 | 14 |
| Wisconsin..... | - | 11 | 16 | 67 | PACIFIC..... | 138 | 118 | 1,071 | 1,044 |
| WEST NORTH CENTRAL..... | 29 | 25 | 174 | 246 | Washington..... | 6 | 3 | 32 | 23 |
| Minnesota..... | 6 | 3 | 26 | 19 | Oregon..... | 5 | 6 | 33 | 32 |
| Iowa..... | 6 | 5 | 20 | 38 | California..... | 126 | 104 | 1,000 | 967 |
| Missouri..... | 8 | 8 | 56 | 100 | Alaska..... | 1 | 2 | 2 | 5 |
| North Dakota..... | - | 1 | 2 | 5 | Hawaii..... | - | 3 | 4 | 17 |
| South Dakota..... | 2 | 1 | 20 | 24 | U. S. TOTAL..... | 1,732 | 1,715 | 12,179 | 12,454 |
| Nebraska..... | 2 | 2 | 18 | 22 | TERRITORIES..... | 55 | 47 | 527 | 560 |
| Kansas..... | 5 | 5 | 32 | 38 | Puerto Rico..... | 51 | 44 | 498 | 544 |
| SOUTH ATLANTIC..... | 574 | 578 | 3,656 | 3,661 | Virgin Islands..... | 4 | 3 | 29 | 16 |
| Delaware..... | 1 | 6 | 31 | 25 | Note: Cumulative Totals include revised and delayed reports through previous months. | | | | |
| Maryland..... | 53 | 46 | 365 | 322 | | | | | |
| District of Columbia..... | 87 | 40 | 443 | 264 | | | | | |
| Virginia..... | 29 | 35 | 173 | 181 | | | | | |
| West Virginia..... | 1 | 13 | 11 | 42 | | | | | |
| North Carolina..... | 80 | 72 | 436 | 542 | | | | | |
| South Carolina..... | 70 | 80 | 501 | 538 | | | | | |
| Georgia..... | 90 | 95 | 552 | 613 | | | | | |
| Florida..... | 163 | 191 | 1,144 | 1,134 | | | | | |

RECOMMENDATION OF THE PUBLIC HEALTH SERVICE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES

The Public Health Service Advisory Committee on Immunization Practices meeting on May 26, 1967, issued the following recommendation on measles vaccines, the second revision of the initial recommendation which appeared in the MMWR, Vol. 14, No. 7 (February 20, 1965). (The first revision appeared in the MMWR, Vol. 14, No. 36, September 11, 1965.)

MEASLES VACCINES

Introduction

Highly effective, safe vaccines are available for eliminating measles in the United States. Collaborative efforts of professional and voluntary medical and public health organizations are directed toward eradicating the disease in 1967. Unless protected by vaccine, virtually all children will at some time have clinically evident measles. Measles is often a severe disease; it is of particular concern because of frequent complications, including bronchopneumonia, middle ear infection, and encephalitis. Encephalitis, which follows measles in approximately one of every 1,000 cases, often causes permanent brain damage and subsequent mental retardation. An average of one measles death occurs for every 10,000 cases.

All susceptible children—those who have not had natural measles or measles vaccine—should be immunized. It is particularly important to immunize children that are still susceptible on entering nursery school, kindergarten and elementary school, because they are often responsible for transmission of measles to other children in the community. Communities should establish programs directed toward vaccinating all children at about one year of age.

Live Attenuated Measles Virus Vaccine (Edmonston and Schwarz Strains)

Live attenuated measles virus vaccine* prepared from the Edmonston or Schwarz (further attenuated) measles virus strains is widely used in the United States. The Edmonston strain is propagated in either chick embryo or canine renal cell culture; it may be given alone or with Measles Immune Globulin according to the manufacturers' directions. The Schwarz strain is prepared only in chick embryo cell culture; it is suitable for administration without Measles Immune Globulin.

The live attenuated measles virus vaccines produce a mild or inapparent, non-communicable infection. Fifteen percent of those receiving either the Edmonston strain with Measles Immune Globulin or the Schwarz strain experience fever, with temperatures of 103°F (rectal) or higher, beginning about the sixth day after vaccination and lasting no longer than 5 days. About twice as many (30 percent) of those receiving Edmonston strain without Measles Immune Globulin have similar responses. The great majority of reports indicate that even children with high fevers experience relatively little discomfort and

minimal toxicity. As a result, febrile reactions often go unnoticed by the parents.

An antibody response develops in virtually all susceptible children who are given live attenuated measles virus vaccines. Edmonston strain vaccine administered without Measles Immune Globulin induces a level and persistence of antibody corresponding to that seen following regular measles. Antibody titers in response to Edmonston strain with Measles Immune Globulin or to Schwarz strain are slightly lower. However, all three of these vaccine schedules appear to confer lasting protection against naturally occurring measles.

Experience with more than 20 million doses administered in the United States by early 1967 indicates that live attenuated measles virus vaccines are among the safest immunizing agents available. To date, serious reactions associated with their use have been very rare.

Recommendations for Vaccine Use

Age

For maximum efficacy, live attenuated measles virus vaccine should be administered when children are at least 12 months old. It can be given to infants at 9 to 12 months of age realizing that the proportion of vaccine responses may be slightly reduced. The proportion is further decreased if Measles Immune Globulin is administered with the vaccine. Vaccination of adults at the present time is rarely necessary, because nearly all individuals are immune by age 15. Limited data indicate that reactions to vaccine are no more common in adults than in children.

High Risk Groups

Immunization against measles is particularly important for children with chronic illnesses, such as heart disease, cystic fibrosis, and chronic pulmonary diseases, as well as for children with malnutrition and those living in institutions.

Prevention of Natural Measles Following Exposure

Live attenuated measles virus vaccine can usually prevent disease if administered before or on the day of exposure to natural measles. Limited studies reported to date indicate that protection is not conferred when vaccine is administered after the day of exposure, nor are adverse effects induced by measles immunization following exposure.

*The official name of the product in use is: Measles Virus Vaccine, Live, Attenuated.

Precautions in the Use of Live Attenuated Measles Virus Vaccines

Severe Febrile Illnesses

Vaccination should be postponed until recovery is complete.

Tuberculosis

The exacerbations of tuberculosis that have been related to natural measles infection, by analogy might accompany infection with live attenuated measles virus. Therefore, any individual with known active tuberculosis should be under treatment when given measles vaccine. Although tuberculin skin testing is desirable as part of ideal health care, it need not be a routine prerequisite in community measles immunization programs. The protection against natural measles outweighs the theoretical hazard of possible exacerbation of tuberculosis infection by the administration of vaccine.

Recent Immune Globulin Administration

After administration of immune globulin, immunization should be deferred for 3 months. Persistence of measles antibody from the globulin may interfere with response to the vaccine.

Marked Hypersensitivity to Vaccine Components

Measles vaccine produced in chick embryo cell culture should not be given to children hypersensitive to ingested egg proteins. Similarly, vaccine produced in canine cell culture should not be administered to children highly sensitive to dog hair or dog dander. To date, no reactions of the anaphylactic type following measles vaccine have been reported in the United States.

Contraindications to Use of Live Attenuated Measles Virus Vaccine

Leukemia, Lymphomas, and Other Generalized Malignancies

Administration of live attenuated measles virus vaccine to children with leukemia has occasionally been followed by severe complications such as fatal giant cell pneumonia. Theoretically, attenuated measles virus infection might be potentiated by other severe underlying diseases, such as lymphomas and generalized malignancies.

Altered Resistance from Therapy

Steroids, alkylating drugs, antimetabolites, and radiation may predispose to untoward complications due to altered resistance.

Pregnancy

Purely on speculative grounds, physicians are reluctant to risk causing fetal damage that might theoretically be related to attenuated measles virus infection.

Management of Patients with Contraindications to Live Attenuated Measles Virus Vaccines

If immediate protection against measles is required for persons in whom use of live attenuated measles virus vaccine is contraindicated, passive immunization with Measles Immune Globulin (dose 0.25 ml/kg) should be given as soon as possible after a known exposure. It is important to note, however, that the preventive dosage of Measles Immune Globulin effective in normal children may not be equally so in children with acute leukemia. Inactivated measles virus vaccines* may induce longer lasting protection than provided by Measles Immune Globulin, but many children with leukemia and those receiving immunosuppressive drugs respond poorly.

Prior Immunization with Inactivated Measles Vaccine

Atypical measles, sometimes severe, following exposure to natural measles, has occasionally been observed in children previously immunized with inactivated measles virus vaccines. Untoward local reactions such as induration and edema have at times been observed when the live measles virus vaccine was administered to persons who had received inactivated vaccine previously.

Despite these reported instances of unusual associations, children who have been given inactivated measles vaccine should also be given the live vaccine for full and lasting protection against natural infection.

Simultaneous Administration of Live Virus Vaccines

Data on simultaneous administration of live virus vaccines are not sufficient to develop comprehensive recommendations; but there are obvious practical advantages to combining vaccines, and investigations are underway which should help to define optimal practices. When combined administration is indicated, available data do not suggest that undesirable responses will result. The following comment presents current attitudes toward scheduling vaccination with three major live virus vaccines—polio, measles, and smallpox.

It has been generally recommended that immunizations with live virus vaccines be separated by at least one month whenever possible. The rationale for this recommendation is the theory that superimposed reactions and diminished antibody responses might result if two or more live virus vaccines were given simultaneously. Ideally, the initial doses of oral poliovirus vaccine should have been given before a child reaches one year, the age for giving live attenuated measles virus vaccine. Administration of polio and measles antigens should be

*Inactivated vaccines derived from Edmonston strain measles virus and prepared either in chick embryo or monkey cell cultures are available (Measles Virus Vaccine, Inactivated). These vaccines should be administered in a three-dose schedule at monthly intervals with a subsequent booster 6 months later. Following primary immunization with inactivated measles virus vaccine, the protection achieved in normal children has been satisfactory for the first few months, but has been shown to decline rapidly thereafter. Inactivated measles virus vaccines should not be used for immunizing normal children.

separated by at least one month. It is likewise desirable to separate measles and smallpox vaccinations by one or more months because both of these antigens may produce febrile reactions.

When, however, immunization program effectiveness is hindered or when the threat of concurrent exposures exists, the relevant live virus vaccines should be given at the same time. Observations do not indicate that this will cause a significant increase in adverse reactions or depressed antibody responses to either antigen.

Community Immunization Programs

Ongoing Programs

Universal immunization as part of good health care should be accomplished through routine and intensive programs carried out in physicians' offices and public health clinics. Programs aimed at immunizing children against measles at about one year of age should be established by all communities. In addition, all susceptible children entering nursery school, kindergarten, and elementary school should receive vaccine because of their particular role in community spread of natural measles.

Community-wide Mass Programs

Mass immunization programs can be useful supplements to the continuing use of live attenuated measles virus vaccine. Many have been organized as part of community measles eradication campaigns. The following points should be considered in planning mass immunization programs:

1. The active cooperation of private physicians and official health agencies normally concerned with the care of children is important.
2. Because live attenuated measles virus vaccines are administered parenterally, adequate numbers of medical and nursing personnel are required.
3. Despite increased public awareness of measles and its frequent, serious complications, substantial effort may be required to attain complete community support.
4. Although a number of children may have febrile reactions to live attenuated measles virus vaccine, extensive experience in community-wide campaigns and in private medical practice indicates that only a small fraction of these reactions requires medical attention. Parents should be told what reactions to expect, to avoid undue concern after the program gets underway.

Control of Measles Epidemics

Studies have shown that measles epidemics can be curtailed or halted in a community by prompt administration of live attenuated measles virus vaccine to selected groups of children, particularly the susceptibles in nursery school, kindergarten, and the first two or three grades of elementary school. However, once measles is widely disseminated in a community, it may be necessary to immunize susceptible children of all ages to alter the course of the epidemic.

Continued Surveillance

Careful surveillance of measles and its complications is necessary for appraising the effectiveness of national measles immunization programs, particularly measles eradication efforts. Such activities can delineate failures to achieve adequate levels of protection and define groups for which epidemic control programs should be instituted.

Although more than 20 million doses of measles virus vaccine had been administered in the United States by early 1967, continuous and careful review of adverse reactions is still important. All serious reactions should be carefully evaluated and reported in detail to local and State health officials so that collaborative national surveillance can be effective.

Immunization Schedules

Recommended immunization schedules are shown in the table below:

IMMUNIZATION SCHEDULES FOR
MEASLES VACCINES

| Type of Vaccine | Age | Doses & Administration* |
|---|-----------------------|---|
| Live attenuated measles virus vaccine (Edmonston Strain) | 12** months and older | 1 |
| Live attenuated measles virus vaccine (Edmonston Strain) plus Measles Immune Globulin | 12** months and older | 1 Plus Measles Immune Globulin (0.01 ml per lb at different site with different syringe) |
| Live "further attenuated" measles virus vaccine (Schwarz Strain) | 12** months and older | 1 |

*Manufacturers' directions regarding administration should be followed.

**May be given to infants between 9 months and 1 year with the expectation of slightly decreased efficacy especially if administered simultaneously with Measles Immune Globulin.

Morbidity and Mortality Weekly Report

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CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

AUGUST 12, 1967 AND AUGUST 13, 1966 (32nd WEEK) - CONTINUED

| AREA | MALARIA | | MEASLES (Rubeola) | | MENINGOCOCCAL INFECTIONS, TOTAL | | | POLIOMYELITIS | | | RUBELLA |
|-------------------------|---------|------|-------------------|---------|---------------------------------|------------|-------|---------------|-----------|-----------|---------|
| | 1967 | 1966 | Cumulative | | 1967 | Cumulative | | Total | Paralytic | | |
| | | | 1967 | 1966 | | 1967 | 1966 | | 1967 | Cum. 1967 | |
| UNITED STATES... | 28 | 222 | 56,846 | 186,980 | 16 | 1,581 | 2,568 | 1 | 1 | 17 | 187 |
| NEW ENGLAND..... | - | 12 | 830 | 2,220 | - | 65 | 113 | - | - | - | 45 |
| Maine..... | - | - | 234 | 194 | - | 3 | 9 | - | - | - | 4 |
| New Hampshire..... | - | - | 74 | 78 | - | 2 | 9 | - | - | - | - |
| Vermont..... | - | - | 42 | 225 | - | 1 | 4 | - | - | - | 1 |
| Massachusetts..... | - | 11 | 330 | 765 | - | 32 | 44 | - | - | - | 28 |
| Rhode Island..... | - | - | 62 | 72 | - | 4 | 12 | - | - | - | 1 |
| Connecticut..... | - | 1 | 88 | 886 | - | 23 | 35 | - | - | - | 11 |
| MIDDLE ATLANTIC..... | 1 | 19 | 2,204 | 17,907 | 2 | 257 | 303 | 1 | 1 | 5 | 14 |
| New York City..... | - | 7 | 436 | 8,236 | - | 46 | 42 | - | - | 1 | 9 |
| New York, Up-State..... | - | 8 | 557 | 2,502 | - | 61 | 87 | - | - | 1 | 3 |
| New Jersey..... | 1 | 1 | 480 | 1,844 | 2 | 92 | 88 | - | - | - | - |
| Pennsylvania..... | - | 3 | 731 | 5,325 | - | 58 | 86 | 1 | 1 | 3 | 2 |
| EAST NORTH CENTRAL... | 5 | 35 | 5,237 | 67,965 | 4 | 218 | 397 | - | - | - | 37 |
| Ohio..... | - | 3 | 1,130 | 6,324 | 1 | 71 | 107 | - | - | - | 4 |
| Indiana..... | - | - | 587 | 5,621 | - | 30 | 68 | - | - | - | - |
| Illinois..... | 5 | 7 | 927 | 11,257 | 2 | 52 | 76 | - | - | - | 7 |
| Michigan..... | - | 5 | 902 | 14,117 | 1 | 50 | 105 | - | - | - | 14 |
| Wisconsin..... | - | 20 | 1,691 | 30,646 | - | 15 | 41 | - | - | - | 12 |
| WEST NORTH CENTRAL... | - | 8 | 2,809 | 8,657 | - | 67 | 140 | - | - | 2 | 5 |
| Minnesota..... | - | - | 120 | 1,639 | - | 16 | 33 | - | - | - | 1 |
| Iowa..... | - | 1 | 744 | 5,302 | - | 13 | 22 | - | - | 1 | 1 |
| Missouri..... | - | 1 | 332 | 529 | - | 13 | 54 | - | - | - | - |
| North Dakota..... | - | 5 | 845 | 1,072 | - | 1 | 9 | - | - | - | 2 |
| South Dakota..... | - | - | 52 | 40 | - | 6 | 4 | - | - | - | - |
| Nebraska..... | - | 1 | 623 | 75 | - | 12 | 8 | - | - | - | 1 |
| Kansas..... | - | - | 93 | NN | - | 6 | 10 | - | - | 1 | - |
| SOUTH ATLANTIC..... | 7 | 22 | 6,791 | 14,946 | 6 | 304 | 433 | - | - | 2 | 14 |
| Delaware..... | - | - | 43 | 256 | - | 6 | 4 | - | - | - | - |
| Maryland..... | - | 2 | 149 | 2,095 | 2 | 37 | 45 | - | - | 1 | - |
| Dist. of Columbia.. | - | - | 22 | 380 | - | 10 | 11 | - | - | - | - |
| Virginia..... | - | 8 | 2,167 | 2,098 | 1 | 37 | 52 | - | - | - | 2 |
| West Virginia..... | - | 7 | 1,362 | 5,133 | - | 21 | 20 | - | - | - | 1 |
| North Carolina..... | 5 | 1 | 843 | 453 | 1 | 67 | 106 | - | - | 1 | - |
| South Carolina..... | - | - | 507 | 653 | 1 | 29 | 46 | - | - | - | 2 |
| Georgia..... | - | - | 32 | 233 | - | 44 | 63 | - | - | - | - |
| Florida..... | 2 | 4 | 1,666 | 3,645 | 1 | 53 | 86 | - | - | - | 9 |
| EAST SOUTH CENTRAL... | - | 14 | 5,104 | 19,517 | - | 123 | 223 | - | - | 1 | 12 |
| Kentucky..... | - | 1 | 1,316 | 4,693 | - | 34 | 82 | - | - | - | 3 |
| Tennessee..... | - | 11 | 1,813 | 12,165 | - | 51 | 73 | - | - | - | 8 |
| Alabama..... | - | - | 1,316 | 1,663 | - | 25 | 49 | - | - | - | 1 |
| Mississippi..... | - | 2 | 659 | 996 | - | 13 | 19 | - | - | 1 | - |
| WEST SOUTH CENTRAL... | 3 | 52 | 17,102 | 23,943 | - | 212 | 363 | - | - | 7 | - |
| Arkansas..... | - | - | 1,404 | 966 | - | 28 | 33 | - | - | - | - |
| Louisiana..... | 3 | - | 151 | 98 | - | 83 | 136 | - | - | - | - |
| Oklahoma..... | - | - | 3,325 | 474 | - | 16 | 18 | - | - | 1 | - |
| Texas..... | - | 52 | 12,222 | 22,405 | - | 85 | 176 | - | - | 6 | - |
| MOUNTAIN..... | - | 22 | 4,578 | 11,759 | - | 27 | 80 | - | - | - | 20 |
| Montana..... | - | - | 277 | 1,801 | - | - | 4 | - | - | - | 2 |
| Idaho..... | - | - | 375 | 1,531 | - | 1 | 5 | - | - | - | - |
| Wyoming..... | - | 1 | 180 | 145 | - | 1 | 6 | - | - | - | - |
| Colorado..... | - | 12 | 1,539 | 1,269 | - | 12 | 41 | - | - | - | 15 |
| New Mexico..... | - | 1 | 576 | 1,115 | - | 3 | 10 | - | - | - | - |
| Arizona..... | - | 8 | 1,005 | 5,254 | - | 4 | 10 | - | - | - | 2 |
| Utah..... | - | - | 357 | 601 | - | 4 | - | - | - | - | 1 |
| Nevada..... | - | - | 269 | 43 | - | 2 | 4 | - | - | - | - |
| PACIFIC..... | 12 | 38 | 12,191 | 20,066 | 4 | 308 | 516 | - | - | - | 40 |
| Washington..... | 3 | 7 | 5,414 | 3,462 | 2 | 27 | 37 | - | - | - | - |
| Oregon..... | 1 | 15 | 1,563 | 1,682 | 1 | 25 | 33 | - | - | - | 4 |
| California..... | 8 | 15 | 4,919 | 14,406 | 1 | 243 | 427 | - | - | - | 23 |
| Alaska..... | - | 1 | 133 | 391 | - | 9 | 15 | - | - | - | 4 |
| Hawaii..... | - | - | 162 | 125 | - | 4 | 4 | - | - | - | 9 |
| Puerto Rico..... | - | 3 | 2,087 | 2,557 | - | 12 | 10 | - | - | - | - |

Morbidity and Mortality Weekly Report

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
AUGUST 12, 1967 AND AUGUST 13, 1966 (32nd WEEK) - CONTINUED

| AREA | STREPTOCOCCAL SORE THROAT & SCARLET FEVER | TETANUS | | TULAREMIA | | TYPHOID | | TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted) | | RABIES IN ANIMALS | |
|-------------------------|---|---------|--------------|-----------|--------------|---------|--------------|--|--------------|----------------------|--------------|
| | 1967 | 1967 | Cum. 1967 | 1967 | Cum. 1967 | 1967 | Cum. 1967 | 1967 | Cum. 1967 | 1967 | Cum. 1967 |
| UNITED STATES... | 4,709 | 7 | 131 | 7 | 109 | 9 | 242 | 18 | 178 | 80 | 2,809 |
| NEW ENGLAND..... | 553 | 1 | 2 | - | - | - | 3 | - | 1 | 9 | 71 |
| Maine..... | 20 | - | - | - | - | - | - | - | - | 1 | 16 |
| New Hampshire..... | - | - | - | - | - | - | - | - | - | - | 37 |
| Vermont..... | - | - | - | - | - | - | - | - | - | 8 | 15 |
| Massachusetts..... | 120 | - | 1 | - | - | - | 2 | - | 1 | - | 2 |
| Rhode Island..... | 65 | - | - | - | - | - | - | - | - | - | 1 |
| Connecticut..... | 348 | 1 | 1 | - | - | - | 1 | - | - | - | - |
| MIDDLE ATLANTIC..... | 7 | - | 11 | - | - | - | 21 | 1 | 18 | 6 | 59 |
| New York City..... | 5 | - | 5 | - | - | - | 10 | - | - | - | - |
| New York, Up-State..... | - | - | 1 | - | - | - | 7 | - | 4 | 5 | 49 |
| New Jersey..... | NN | - | 1 | - | - | - | 2 | 1 | 7 | - | - |
| Pennsylvania..... | 2 | - | 4 | - | - | - | 2 | - | 7 | 1 | 10 |
| EAST NORTH CENTRAL... | 223 | - | 15 | - | 10 | - | 19 | 2 | 17 | 2 | 289 |
| Ohio..... | 31 | - | 4 | - | - | - | 4 | 2 | 9 | - | 99 |
| Indiana..... | 9 | - | 2 | - | 2 | - | 6 | - | 1 | 1 | 64 |
| Illinois..... | 74 | - | 7 | - | 8 | - | 2 | - | 7 | 1 | 57 |
| Michigan..... | 62 | - | 2 | - | - | - | 6 | - | - | - | 23 |
| Wisconsin..... | 47 | - | - | - | - | - | 1 | - | - | - | 46 |
| WEST NORTH CENTRAL... | 207 | - | 10 | 2 | 19 | - | 14 | 1 | 2 | 24 | 669 |
| Minnesota..... | - | - | 3 | - | - | - | 1 | - | - | 2 | 126 |
| Iowa..... | 67 | - | 1 | - | 1 | - | 2 | - | - | 8 | 87 |
| Missouri..... | 13 | - | 5 | 1 | 7 | - | 7 | - | 1 | 4 | 123 |
| North Dakota..... | 23 | - | - | - | - | - | - | - | - | 6 | 122 |
| South Dakota..... | 10 | - | 1 | 1 | 2 | - | - | - | - | - | 91 |
| Nebraska..... | 23 | - | - | - | - | - | 3 | 1 | 1 | - | 40 |
| Kansas..... | 71 | - | - | - | 9 | - | 1 | - | - | 4 | 80 |
| SOUTH ATLANTIC..... | 724 | 6 | 31 | 1 | 9 | 3 | 32 | 12 | 81 | 14 | 370 |
| Delaware..... | 5 | - | - | - | - | - | - | - | - | - | - |
| Maryland..... | 96 | - | - | - | - | - | 2 | 4 | 15 | - | - |
| Dist. of Columbia.. | - | - | - | - | - | - | 1 | - | - | - | - |
| Virginia..... | 253 | - | 6 | - | - | - | 3 | 1 | 18 | 4 | 174 |
| West Virginia..... | 282 | 1 | 1 | - | 2 | - | 1 | - | 1 | - | 54 |
| North Carolina..... | 5 | - | 6 | - | - | - | 3 | 5 | 35 | - | 3 |
| South Carolina..... | 19 | - | 1 | - | 2 | 3 | 7 | 1 | 4 | - | - |
| Georgia..... | 12 | - | 3 | 1 | 4 | - | 8 | 1 | 8 | 3 | 86 |
| Florida..... | 52 | 5 | 14 | - | 1 | - | 7 | - | - | 7 | 53 |
| EAST SOUTH CENTRAL... | 1,052 | - | 21 | - | 8 | 5 | 39 | 1 | 31 | 7 | 528 |
| Kentucky..... | 10 | - | 2 | - | 1 | 2 | 16 | 1 | 11 | 1 | 115 |
| Tennessee..... | 791 | - | 8 | - | 5 | 1 | 7 | - | 14 | 5 | 374 |
| Alabama..... | 89 | - | 8 | - | - | - | 9 | - | 6 | 1 | 37 |
| Mississippi..... | 162 | - | 3 | - | 2 | 2 | 7 | - | - | - | 2 |
| WEST SOUTH CENTRAL... | 504 | - | 26 | 4 | 52 | - | 29 | 1 | 14 | 14 | 585 |
| Arkansas..... | - | - | 5 | 3 | 31 | - | 7 | - | 3 | 4 | 81 |
| Louisiana..... | 4 | - | 3 | - | 3 | - | 12 | - | - | 1 | 50 |
| Oklahoma..... | 29 | - | 1 | - | 14 | - | 6 | 1 | 7 | 7 | 194 |
| Texas..... | 471 | - | 17 | 1 | 4 | - | 4 | - | 4 | 2 | 260 |
| MOUNTAIN..... | 811 | - | - | - | 7 | - | 16 | - | 8 | - | 89 |
| Montana..... | 30 | - | - | - | 1 | - | 1 | - | - | - | - |
| Idaho..... | 24 | - | - | - | - | - | - | - | - | - | - |
| Wyoming..... | 2 | - | - | - | 2 | - | - | - | - | - | 5 |
| Colorado..... | 462 | - | - | - | 1 | - | 11 | - | 8 | - | 10 |
| New Mexico..... | 173 | - | - | - | - | - | 1 | - | - | - | 26 |
| Arizona..... | 62 | - | - | - | - | - | 3 | - | - | - | 43 |
| Utah..... | 52 | - | - | - | 3 | - | - | - | - | - | 2 |
| Nevada..... | 6 | - | - | - | - | - | - | - | - | - | 3 |
| PACIFIC..... | 628 | - | 15 | - | 4 | 1 | 69 | - | 6 | 4 | 149 |
| Washington..... | 94 | - | - | - | 2 | 1 | 1 | - | 1 | - | 1 |
| Oregon..... | 56 | - | 1 | - | - | - | - | - | - | - | 2 |
| California..... | 417 | - | 12 | - | 2 | - | 65 | - | 5 | 4 | 146 |
| Alaska..... | 44 | - | - | - | - | - | - | - | - | - | - |
| Hawaii..... | 17 | - | 2 | - | - | - | 3 | - | - | - | - |
| Puerto Rico..... | 2 | 1 | 10 | - | - | - | 4 | - | - | 1 | 26 |

Week No.
32

DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED AUGUST 12, 1967

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

| Area | All Causes | | Pneumonia and Influenza All Ages | Under 1 year All Causes | Area | All Causes | | Pneumonia and Influenza All Ages | Under 1 year All Causes |
|----------------------------|------------|-------------------|----------------------------------|-------------------------|---|---------------|-------------------|----------------------------------|-------------------------|
| | All Ages | 65 years and over | | | | All Ages | 65 years and over | | |
| NEW ENGLAND: | 712 | 430 | 38 | 34 | SOUTH ATLANTIC: | 1,039 | 538 | 40 | 57 |
| Boston, Mass.----- | 237 | 131 | 11 | 14 | Atlanta, Ga.----- | 109 | 45 | 3 | 8 |
| Bridgeport, Conn.----- | 45 | 32 | 4 | 3 | Baltimore, Md.----- | 245 | 119 | 4 | 14 |
| Cambridge, Mass.----- | 20 | 13 | - | 1 | Charlotte, N. C.----- | 47 | 21 | 3 | 3 |
| Fall River, Mass.----- | 17 | 11 | - | - | Jacksonville, Fla.----- | 56 | 24 | 3 | 4 |
| Hartford, Conn.----- | 68 | 31 | 3 | 8 | Miami, Fla.----- | 62 | 31 | - | 2 |
| Lowell, Mass.----- | 31 | 22 | 1 | - | Norfolk, Va.----- | 41 | 21 | 3 | 2 |
| Lynn, Mass.----- | 16 | 12 | - | - | Richmond, Va.----- | 84 | 48 | 2 | 10 |
| New Bedford, Mass.----- | 21 | 16 | 2 | 1 | Savannah, Ga.----- | 26 | 14 | 2 | 2 |
| New Haven, Conn.----- | 42 | 26 | 1 | 2 | St. Petersburg, Fla.----- | 77 | 62 | 8 | 1 |
| Providence, R. I.----- | 61 | 33 | 3 | 1 | Tampa, Fla.----- | 58 | 30 | 7 | 2 |
| Somerville, Mass.----- | 17 | 12 | 4 | - | Washington, D. C.----- | 183 | 98 | 4 | 7 |
| Springfield, Mass.----- | 60 | 38 | 9 | 4 | Wilmington, Del.----- | 51 | 25 | 1 | 2 |
| Waterbury, Conn.----- | 27 | 17 | - | - | | | | | |
| Worcester, Mass.----- | 50 | 36 | - | - | EAST SOUTH CENTRAL: | 548 | 307 | 28 | 25 |
| MIDDLE ATLANTIC: | 2,882 | 1,601 | 91 | 124 | Birmingham, Ala.----- | 99 | 51 | 1 | 3 |
| Albany, N. Y.----- | 39 | 21 | - | - | Chattanooga, Tenn.----- | 55 | 31 | 8 | 1 |
| Allentown, Pa.----- | 34 | 17 | 1 | 2 | Knoxville, Tenn.----- | 33 | 23 | 1 | 2 |
| Buffalo, N. Y.----- | 138 | 65 | 4 | 15 | Louisville, Ky.----- | 82 | 52 | 11 | 4 |
| Camden, N. J.----- | 44 | 23 | 4 | 3 | Memphis, Tenn.----- | 108 | 57 | 1 | 10 |
| Elizabeth, N. J.----- | 56 | 32 | 1 | - | Mobile, Ala.----- | 44 | 19 | - | 4 |
| Erie, Pa.----- | 52 | 32 | 1 | - | Montgomery, Ala.----- | 40 | 21 | 4 | 1 |
| Jersey City, N. J.----- | 63 | 37 | 3 | 6 | Nashville, Tenn.----- | 87 | 53 | 2 | - |
| Newark, N. J.----- | 93 | 33 | 3 | 17 | WEST SOUTH CENTRAL: | 1,146 | 573 | 41 | 74 |
| New York City, N. Y.----- | 1,442 | 815 | 43 | 51 | Austin, Tex.----- | 72 | 36 | 12 | 4 |
| Paterson, N. J.----- | 39 | 18 | 1 | 1 | Baton Rouge, La.----- | 39 | 23 | 1 | - |
| Philadelphia, Pa.----- | 352 | 180 | 10 | 11 | Corpus Christi, Tex.----- | 28 | 10 | - | 3 |
| Pittsburgh, Pa.----- | 178 | 86 | 5 | 5 | Dallas, Tex.----- | 141 | 71 | 2 | 5 |
| Reading, Pa.----- | 40 | 28 | 2 | 1 | El Paso, Tex.----- | 29 | 15 | 4 | 1 |
| Rochester, N. Y.----- | 82 | 49 | 2 | 2 | Fort Worth, Tex.----- | 92 | 42 | 4 | 11 |
| Schenectady, N. Y.----- | 36 | 32 | 1 | - | Houston, Tex.----- | 182 | 91 | 2 | 7 |
| Scranton, Pa.----- | 47 | 36 | 2 | 1 | Little Rock, Ark.----- | 69 | 34 | 3 | 7 |
| Syracuse, N. Y.----- | 45 | 25 | 1 | 4 | New Orleans, La.----- | 158 | 70 | 3 | 12 |
| Trenton, N. J.----- | 38 | 24 | 1 | 2 | Oklahoma City, Okla.----- | 100 | 52 | 1 | 13 |
| Utica, N. Y.----- | 33 | 29 | 3 | - | San Antonio, Tex.----- | 122 | 67 | 5 | 7 |
| Yonkers, N. Y.----- | 31 | 19 | 3 | 1 | Shreveport, La.----- | 49 | 24 | 2 | 2 |
| | | | | | Tulsa, Okla.----- | 65 | 38 | 2 | 2 |
| EAST NORTH CENTRAL: | 2,474 | 1,329 | 55 | 140 | MOUNTAIN: | 385 | 209 | 12 | 26 |
| Akron, Ohio----- | 58 | 30 | - | 4 | Albuquerque, N. Mex.----- | 44 | 20 | 3 | 2 |
| Canton, Ohio----- | 14 | 11 | - | 1 | Colorado Springs, Colo.----- | 16 | 10 | 1 | 1 |
| Chicago, Ill.----- | 716 | 369 | 22 | 38 | Denver, Colo.----- | 107 | 51 | - | 7 |
| Cincinnati, Ohio----- | 160 | 96 | 3 | 11 | Ogden, Utah----- | 14 | 10 | - | - |
| Cleveland, Ohio----- | 165 | 79 | 2 | 7 | Phoenix, Ariz.----- | 85 | 45 | 4 | 8 |
| Columbus, Ohio----- | 105 | 52 | - | 6 | Pueblo, Colo.----- | 17 | 12 | 2 | - |
| Dayton, Ohio----- | 90 | 55 | 1 | 3 | Salt Lake City, Utah----- | 55 | 30 | 1 | 5 |
| Detroit, Mich.----- | 341 | 179 | 9 | 16 | Tucson, Ariz.----- | 47 | 31 | 1 | 3 |
| Evansville, Ind.----- | 40 | 25 | - | 2 | PACIFIC: | 1,440 | 855 | 28 | 64 |
| Flint, Mich.----- | 47 | 25 | 1 | 2 | Berkeley, Calif.----- | 16 | 12 | - | - |
| Fort Wayne, Ind.----- | 43 | 20 | 4 | 8 | Fresno, Calif.----- | 41 | 22 | 1 | 5 |
| Gary, Ind.----- | 70 | 32 | 1 | 8 | Glendale, Calif.----- | 31 | 20 | 2 | - |
| Grand Rapids, Mich.----- | 40 | 25 | 1 | 1 | Honolulu, Hawaii----- | 38 | 17 | 1 | 7 |
| Indianapolis, Ind.----- | 148 | 82 | - | 9 | Long Beach, Calif.----- | 72 | 46 | 2 | 2 |
| Madison, Wis.----- | 50 | 23 | - | 4 | Los Angeles, Calif.----- | 448 | 284 | 11 | 16 |
| Milwaukee, Wis.----- | 136 | 84 | 2 | 7 | Oakland, Calif.----- | 98 | 58 | 4 | 7 |
| Peoria, Ill.----- | 38 | 22 | - | 4 | Pasadena, Calif.----- | 27 | 16 | 1 | 1 |
| Rockford, Ill.----- | 24 | 13 | 3 | 3 | Portland, Oreg.----- | 99 | 59 | - | 2 |
| South Bend, Ind.----- | 34 | 15 | 2 | 4 | Sacramento, Calif.----- | 58 | 34 | - | 2 |
| Toledo, Ohio----- | 100 | 58 | 3 | 4 | San Diego, Calif.----- | 61 | 27 | 1 | 2 |
| Youngstown, Ohio----- | 55 | 34 | 1 | 1 | San Francisco, Calif.----- | 176 | 97 | - | 4 |
| WEST NORTH CENTRAL: | 765 | 464 | 24 | 39 | San Jose, Calif.----- | 46 | 23 | 1 | 3 |
| Des Moines, Iowa----- | 57 | 34 | 3 | 5 | Seattle, Wash.----- | 130 | 81 | 1 | 2 |
| Duluth, Minn.----- | 21 | 16 | - | 1 | Spokane, Wash.----- | 55 | 36 | - | 2 |
| Kansas City, Kans.----- | 52 | 28 | 5 | 4 | Tacoma, Wash.----- | 44 | 23 | 3 | 9 |
| Kansas City, Mo.----- | 119 | 76 | 2 | 5 | | | | | |
| Lincoln, Nebr.----- | 23 | 15 | - | 2 | Total | 11,391 | 6,306 | 357 | 583 |
| Minneapolis, Minn.----- | 99 | 65 | 2 | 5 | Cumulative Totals | | | | |
| Omaha, Nebr.----- | 54 | 30 | - | 2 | including reported corrections for previous weeks | | | | |
| St. Louis, Mo.----- | 237 | 141 | 9 | 11 | All Causes, All Ages----- | 398,692 | | | |
| St. Paul, Minn.----- | 67 | 43 | 1 | 3 | All Causes, Age 65 and over----- | 227,962 | | | |
| Wichita, Kans.----- | 36 | 16 | 2 | 1 | Pneumonia and Influenza, All Ages----- | 14,375 | | | |
| | | | | | All Causes, Under 1 Year of Age----- | 20,226 | | | |

EPIDEMIOLOGIC NOTES AND REPORTS
SHIGELLOSIS - Clay County, Missouri

On August 9, 1967, a family outbreak of gastroenteritis which resulted in the death of two children was brought to the attention of the Clay County Health Department by a private physician and the pathologists of the North Kansas City Memorial Hospital. Investigation revealed that five of eight family members developed diarrhea and fever; twin daughters experienced onset on August 4, another sister on August 5, a brother on August 6, and the mother on August 8 (Table 3). One of the twins and the younger sister died the night of August 7, the first with dehydration, hyponatremia, and acidosis, and the latter due to aspiration. The mother and son were hospitalized with symptoms of fever and diarrhea and have now recovered. The other twin recovered rapidly without special treatment. Stool cultures from four of the five cases grew *Shigella flexneri*.

Table 3
Family Outbreak of *Shigella flexneri*
Clay County, Missouri - August 1967

| Family Members | Age | Onset | Stool Cultures |
|----------------|-----|------------|----------------|
| Father | 31 | No illness | Negative |
| Mother | 28 | 8/8/67 | Positive |
| Son | 13 | No illness | Negative |
| Son | 11 | No illness | Negative |
| Son | 8 | 8/6/67 | Positive |
| Daughter* | 7 | 8/4/67 | Positive |
| Daughter | 7 | 8/4/67 | Positive |
| Daughter* | 6 | 8/5/67 | None taken |

*Fatal Case

Epidemiologic investigations uncovered no illness in the immediate neighborhood, a suburb of Kansas City, Missouri. The family had not attended any group meals nor visited outside the home. All foods available in the kitchen were cultured, but no particular item could be implicated. Tacos and hamburgers from nearby restaurants were possible sources of infection.

The Clay County Health Department inspected and sampled the family water supply; no coliform organisms were found. The septic tank showed no evidence of malfunction. A door-to-door neighborhood epidemiologic and rectal swab survey was conducted to determine prevalence of diarrheal illness and asymptomatic carriers. Results are pending.

(Reported by Dr. Paul A. Lindquist, Medical Director, Clay County Health Department; the Missouri Division of Health; and the Ecological Investigations Program, Kansas City, Kansas, NCDC.)

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 17,000, IS PUBLISHED AT THE NATIONAL COMMUNICABLE DISEASE CENTER, ATLANTA, GEORGIA.

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ACTING CHIEF, STATISTICS SECTION
IDA L. SHERMAN, M.S.

IN ADDITION TO THE ESTABLISHED PROCEDURES FOR REPORTING MORBIDITY AND MORTALITY, THE NATIONAL COMMUNICABLE DISEASE CENTER WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVESTIGATIONS WHICH ARE OF CURRENT INTEREST TO HEALTH OFFICIALS AND WHICH ARE DIRECTLY RELATED TO THE CONTROL OF COMMUNICABLE DISEASES. SUCH COMMUNICATIONS SHOULD BE ADDRESSED TO:

THE EDITOR
MORBIDITY AND MORTALITY WEEKLY REPORT
NATIONAL COMMUNICABLE DISEASE CENTER
ATLANTA, GEORGIA 30333

NOTE: THE DATA IN THIS REPORT ARE PROVISIONAL AND ARE BASED ON WEEKLY TELEGRAMS TO THE NCDC BY THE INDIVIDUAL STATE HEALTH DEPARTMENTS. THE REPORTING WEEK CONCLUDES ON SATURDAY; COMPILED DATA ON A NATIONAL BASIS ARE RELEASED ON THE SUCCEEDING FRIDAY.

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