



POLIOMYELITIS SURVEILLANCE REPORT

FOR ADMINISTRATIVE USE

REPORT NO. 195

APRIL 11, 1960

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SUPPLEMENT NO. 39 - POLIOMYELITIS VACCINATION

SURVEY, ST. LOUIS COUNTY, MISSOURI

September, 1959

SUPPLEMENT NO. 40 - RURAL SURVEY OF POLIOMYELITIS

VACCINATION, JEFFERSON COUNTY, MISSOURI

September 29 - October 2, 1959

SPECIAL NOTE

This report is intended for the information and administrative use of those involved in the investigation and control of poliomyelitis and polio-like diseases. It presents a summary of provisional information reported to CDC from State Health Departments, the National Office of Vital Statistics, Virology Laboratories, Epidemic Intelligence Service Officers, and other pertinent sources. Since much of the information is preliminary in nature, confirmation and final interpretation should be determined in consultation with the original investigators prior to any further use of the material.



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SUMMARY

Poliomyelitis incidence remains at seasonal low levels throughout the continental United States, but there is an epidemic underway in Puerto Rico.

The cumulative total of reported cases for 1960 is at the level of the comparable period of 1958. The paralytic total for the past 13 weeks is midway between that of 1958 and that of 1959.

An unusual number of cases, 5 paralytic and 2 nonparalytic, all due to Type I poliovirus, has occurred this winter in Minnesota.

Several large-scale field trials and a number of smaller studies using attenuated poliovirus vaccines are underway. A newly reported study in New York City is described, and a progress report from Miami is included.

A summary tabulation of routine surveillance reports of under 30 day cases in 1959 is published in this report.

1. CURRENT POLIOMYELITIS MORBIDITY TRENDS

During the 13th week of 1960, ending April 2, there were 10 new cases of poliomyelitis reported to the NOVS. This is a decrease from the 20 cases, 15 paralytic, reported during the preceding week. The cumulative total for 1960 is now 222 cases, of which 156 are reported as paralytic (Table I).

Polio incidence remains at a seasonal low level with fluctuations within a range comparable to that in 1958, and significantly below that of 1959 (Figure I). When compared to the preceding 4 years, the 1960 cumulative total is lower than any except 1958, and the paralytic total is midway between those of 1958 and 1959.

TOTAL THROUGH 13TH WEEK FOR FIVE YEARS

| | 1960 | 1959 | 1958 | 1957 | 1956 |
|-----------|------|------|------|------|------|
| Paralytic | 156 | 211 | 121 | 278 | 619 |
| Total | 222 | 296 | 216 | 532 | 1111 |

Six week totals are below those of last year in all regions except for a slight increase in the East North Central Region, accounted for largely by Michigan. The Pacific Region has an approximately equal 6-week total to that in 1959, with the majority of cases in California but without any unusual localization within the state.

2. REPORTS

A. Puerto Rico

During the course of routine poliomyelitis surveillance an unusual increase in paralytic poliomyelitis was reported by Dr. Rafael Timothee, Chief, Bureau of Communicable Disease Control, Commonwealth of Puerto Rico, to the Polio Surveillance Unit on March 25, 1960. The last major occurrence of poliomyelitis in Puerto Rico was an epidemic during the winter of 1954 - 55. Total annual polio morbidity since 1953 in Puerto Rico is shown in Table 2A.

TABLE 2A

| <u>Year</u> | <u>No. of Cases</u> |
|------------------------|---------------------|
| 1953 | 34 |
| 1954 | 106 |
| 1955 | 448 |
| 1956 | 51 |
| 1957 | 33 |
| 1958 | 59 |
| 1959 | 9 |
| 1960 (through April 5) | 41 |

The island is semi-tropical and has no apparent polio season.

Through the week ending March 19, a total of 22 paralytic cases had been reported for 1960. At the invitation of Dr. Guillermo Arbona, Secretary of Health, Puerto Rico, Dr. Harold W. Wylie, EIS physician and Chief of the Poliomyelitis Surveillance Unit, Communicable Disease Center, travelled to San Juan to assist in planning local surveillance activities. The following information has been furnished by Dr. Timothee with the assistance of Dr. Wylie.

The first case occurred during the second week of January. A few additional cases had onsets during February, and the number of reported cases increased remarkably in March (see Figure 2A). As of April 4, 1960 there had been reported a total of 37 paralytic cases plus one nonparalytic, one unspecified, and two suspect cases. Two deaths have been recorded. The cases reported during February and March occurred primarily in the southern part of the island with the largest concentration in and around the city of Ponce, which has a population of about 120,000. Thus far 17 cases have been reported from the Ponce Municipality and an additional 9 cases have been reported from neighboring municipalities. However, in recent weeks the disease has appeared to spread to other areas of the island. There have now been five cases in the vicinity of Arecibo in northwestern Puerto Rico, and at least four cases in the capital city of San Juan. Scattered cases have also been reported in other areas, as far west as Anasco and as far east as Humacao.

The age distribution and Salk vaccination status of the 37 reported paralytic cases are tabulated in Table 2B. It is felt that the level of vaccination in the Ponce area is very low, especially within the pre-school age population. In light of this, it is noteworthy that 78 per cent of the cases are unvaccinated whereas only 11 percent have had three or more doses of vaccine. Furthermore, 89 per cent of the cases have been in the pre-school age group with fully 65 per cent of the cases aged 2 years or less.

Stool specimens have been collected, along with acute and convalescent paired sera, from a number of patients. These specimens will be studied by Dr. Andrew Fodor, Chief, Virus Diagnostic Unit, Communicable Disease Center, Chamblee, Georgia and by Dr. Albert B. Sabin, The Children's Hospital Reserach Foundation, Cincinnati, Ohio.

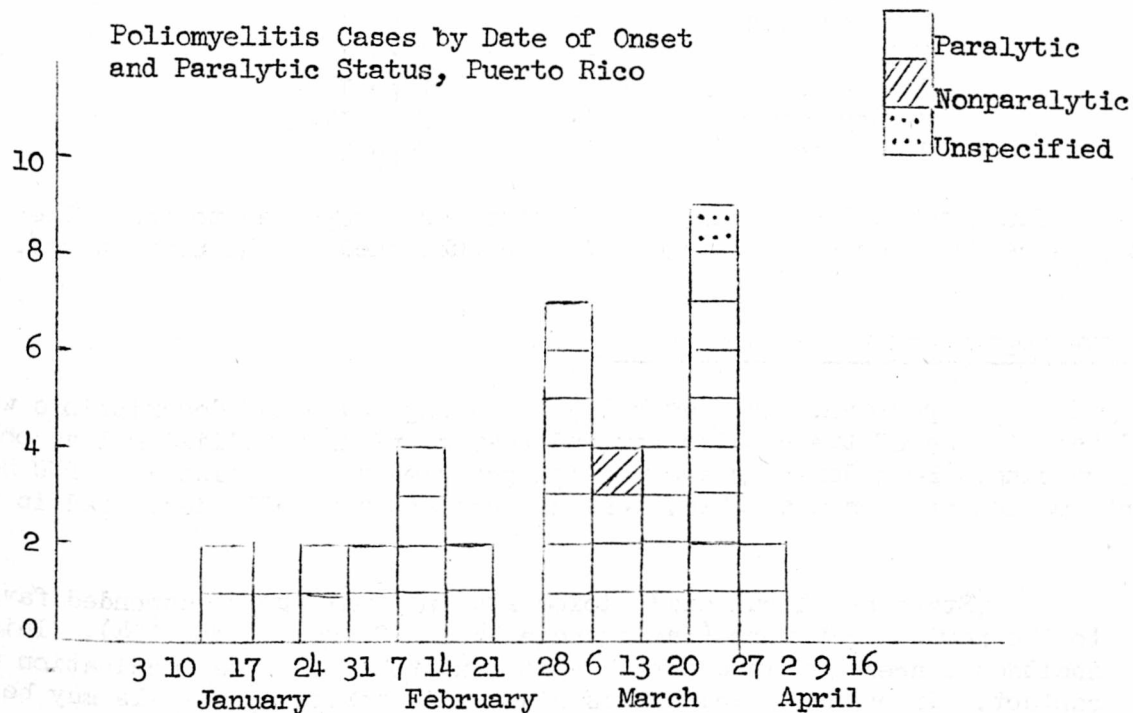
Further epidemiological and virologic data will be published, as it becomes available, in subsequent PSU Reports.

Table 2B

PARALYTIC POLIOMYELITIS BY AGE GROUP
AND VACCINATION STATUS, PUERTO RICO
(through April 4, 1960)

| Age | Doses of Vaccine | | | | | Total |
|-------|------------------|---|---|----|-----|-------|
| | 0 | 1 | 2 | 3+ | Unk | |
| <1 | 5 | | | | | 5 |
| 1 | 11 | | 1 | 1 | | 13 |
| 2 | 6 | | | | | 6 |
| 3 | 3 | 2 | | 1 | | 6 |
| 4 | 2 | | | | | 3 |
| 5-9 | 1 | | 1 | | | 2 |
| 10-14 | | | | | | |
| 15-19 | | | | | | |
| 20+ | 1 | | | | | 1 |
| Unk. | | | | 1 | | 1 |
| Total | 29 | 2 | 2 | 4 | | 37 |

Figure 2A



B. Minnesota

Dr. D. S. Freming, Director of the Minnesota Division of Disease Prevention and Control reports that, as of April 5, there have been 7 cases of poliomyelitis in the state with onsets in 1960. Type I poliovirus has been isolated from all 7 cases, 5 of which were paralytic. Three cases have occurred in the Minneapolis - St. Paul area and two have occurred in Brainerd, in central Minnesota (population approximately 13,000). The other two cases have been in out-of-state residents, one from Colmer, Iowa, and one from Woodville, Wisconsin. Three cases had onset in January, one in February, and three in March. This is an unusually high incidence for winter in Minnesota; during a comparable 13 week period in 1959 there were no cases, and in 1958 only one case. (It is perhaps worth noting that 3 cases of polio, two confirmed as Type I, occurred in Des Moines, Iowa, in March 1959 - 2-3 months preceding the severe epidemic that developed there in the summer.

3. 1960 POLIOMYELITIS CASES REPORTED TO PSU

Through April 7, there have been 71 individual case forms with onset in 1960 reported to the PSU. Of these cases, 58 or 82 per cent are paralytic.

The following poliovirus isolations have been noted from these early 1960 case forms in the following states:

| | |
|---------------|----------|
| Louisiana | Type III |
| New York | Type III |
| New York City | Type I |
| Ohio | Type I |
| Oregon | Type I |
| Pennsylvania | Type III |
| Wisconsin | Type I |

A final tabulation of individual case forms reported to the Polio Surveillance Unit for the year 1959 will be published in the near future.

4. LIVE POLIOVIRUS VACCINE PROGRAMS

In PSU Report No. 194 (March 11) a listing and brief descriptions were published of some of the studies now underway or planned utilizing live poliovirus vaccine. Both domestic and foreign programs will be listed in PSU Reports as information becomes available. One new report is briefly described in this issue.

(State and local epidemiologists have uniformly responded favorably to the revised PSU form (facing page 14 in PSU Report No. 194). This form includes spaces for information pertinent to live virus vaccination and contact. In cases in which this history is positive, details may be given on the reverse side of the form. Supplies of the old form may be destroyed and the revised form ordered from the Polio Surveillance Unit in Atlanta for use by state health departments.)

A. Programs previously reported:

1. Sabin Strains

- a. New Haven, Connecticut (Dr. John R. Paul, Section of Epidemiology and Preventive Medicine, Yale University School of Medicine). -- A field trial using Types I, II, and III in pre-school children.
- b. Houston, Texas (Dr. Joseph L. Melnick, Department of Virology and Epidemiology, Baylor University College of Medicine). -- A study of attenuated virus in young children and family contacts.
- c. Cleveland, Ohio (Dr. Frederick C. Robbins, Department of Pediatrics and Contagious Diseases, Cleveland Metropolitan Hospital). -- A study of Type I attenuated virus in newborn infants.
- d. New Orleans, Louisiana (Dr. John P. Fox, Division of Epidemiology, The Public Health Research Institute of the City of New York and Dr. Henry M. Gelfand, Enterovirus Unit Laboratory Branch, CDC, Chamblee, Georgia). -- All three types of attenuated virus being studied in infants under 30 days of age.
- e. Foreign Programs (submitted by Dr. Albert B. Sabin, The Children's Hospital Research Foundation, Cincinnati, Ohio)
 - 1) Toluca, Mexico (Dr. M. Ramos - Alvarez)
Mass feeding of children with a polyvalent vaccine in a tropical, poorly-sanitized population.
 - 2) British Medical Research Council (Professor C. H. Stuart - Harris, University Department of Medicine, The Royal Hospital, Sheffield 1, England) A series of studies using the 3 types of vaccine virus.
 - 3) Holland (Professor J. D. Verlinde - Netherlands Institute of Preventive Medicine, Wassenaarseweg 56, Leiden, Holland) - A study of immunization effectiveness in infants.
 - 4) Italy (Professor G. D'Alessandro, Istituto D'Igiene E Microbiologia, Universita Di Palermo, Via Divisi 83, Palermo, Italy, and Dr. A. Giovanardi, Istituto Di Igiene, Universita Di Milano, Via Francesco Sforza 35, Milano, Italy) - details not available.
 - 5) Yugoslavia (Dr. M. Milanoric - Institute of Hygiene, Bulerar J.N.A. 12, Belgrade, Yugoslavia) - A community study using three monovalent vaccines in children.
 - 6) U.S.S.R. (Professor M.P. Chumakov, Institute for Poliomyelitis Research, Moscow) - oral vaccination of the total population 20 years of age and under.

7) Hungary - Feeding of all 3 monovalent vaccines to all children 2 months to 14 years old.

8) Czechoslovakia (Dr. V. Skovaneck, Ministry of Health, Prague) - Mass vaccination of all children up to about 15 years of age.

2. Coxsackie Strains

a. Miami, Florida (Dr. George Erickson, Dade County Health Department, 1350 N.W. 14th Street, Miami, Florida, and Dr. M. Eugene Flipse, University of Miami School of Medicine, Jackson Memorial Hospital, Miami, Florida) - A large-scale community-wide field trial of oral trivalent vaccine among all residents less than 40 years of age.

b. Minnesota (Dr. R. N. Barr, State of Minnesota, Department of Health, Minneapolis, Minnesota) - Community-wide field trials of trivalent attenuated oral vaccine in three cities plus several specialized studies.

B. Newly Reported Program - New York City

The following data has been extracted from a report furnished by Dr. Saul Krugman, Associate Professor of Pediatrics, New York University College of Physicians.

During the three-month period between October 1959 and January 1960 monovalent and trivalent attenuated poliovirus vaccines, Sabin strains, were administered to 400 newborn infants at the New York University, Bellevue Medical Center. The vaccine was given orally in varying dosages and schedules either by depositing a measured amount on the back of the tongue or by swabbing the posterior pharyngeal wall to answer these questions: 1) Would the ingestion of larger doses permit enough of the vaccine viruses regularly to pass the "acid barrier" of the stomach of newborn infants and result in regular multiplication in the intestinal tract? (Poliovirus may be destroyed below a pH of 2.5 and the gastric contents of newborns often have a pH of about 1.5.) 2) Would it be possible to by-pass the potential handicap of high gastric acidity by swabbing the vaccine directly on the posterior pharyngeal wall? 3) Would all 3 types multiply following administration of a mixture of large doses of Types I, II, and III poliovirus either by mouth or by throat as determined by virus excretion and antibody formation?"

Specimens of cord blood and serum obtained at 3 months of age were simultaneously tested for antibody by the pH method (metabolic inhibition test.) Stool specimens obtained (usually 4 to 5 days after birth) from infants in each of the study groups were tested for presence of poliovirus. Infants were returned to the Well Baby Clinic at about one month and 3 months of age. All 400 infants remained asymptomatic during 5 days or more in the nursery, and no untoward effects were observed infants examined at one month and three months of age.

C. Progress Report from the Dade County Live Virus Vaccine Field Trial

The following progress report has been received from Dr. George Erickson, Epidemiologist, Dade County Health Department, Miami, Florida:

"Since the beginning of the oral vaccination program on February 3 it is estimated that over 350,000 individuals under age 40 in Dade County have received the vaccine. During the period of time February 3 to April 1 a very careful surveillance program has detected 15 cases of aseptic meningitis and 5 cases of paralytic polio occurring in the entire county population of 950,000. There were 6 cases of paralytic disease with onset during the same 8 week period in 1959. Each of these 1960 cases is undergoing a very exacting clinical, virological and epidemiological study to determine if possible the etiology and association of the cases with prior killed or live virus vaccination. The mass oral vaccination program will terminate between April 15 and 30 at which time it is estimated over 75 per cent of the eligible population will have received the vaccine. The surveillance program is planned to continue for at least 5 years."

5. ROUTINE POLIOMYELITIS SURVEILLANCE - 1959

A. Cases with onset within 30 days of vaccination during 1959 - Final Report

Ever since May 1955, all cases of poliomyelitis occurring within thirty days of vaccination have been promptly investigated by state and local health authorities to determine the manufacturer and lot number of the vaccine used and to seek any correlation between vaccine site and site of first paralysis. These data are promptly reported to the Polio Surveillance Unit at the Communicable Disease Center in Atlanta.

During 1959 there were a total of 423 cases of poliomyelitis, which occurred during this 30 day interval from inoculation to onset of illness, reported to the Polio Surveillance Unit. This represents an increase over the total of 147 such cases reported in 1958 and reflects the higher incidence of poliomyelitis during the past year, as well as the effect of mass immunization programs in epidemic areas. Arkansas, Iowa, and Missouri account for one-third of the total "under 30-day cases" reported. In these states intensive immunization programs were carried out during epidemics in Little Rock, Des Moines and Kansas City. In such a situation, an increased number of cases with recent vaccination is to be expected.

Of the 423 cases reported, 272 or 64 per cent were classified as paralytic on preliminary forms. When corrected for 60-day follow up evaluation, 242 or 57 per cent were found to have residual paralysis. The breakdown of cases initially reported as poliomyelitis is as follows:

| | |
|----------------------------|-------|
| Paralytic Poliomyelitis | 242 |
| Nonparalytic Poliomyelitis | 145 |
| Unspecified Poliomyelitis | 2 |
| Aseptic Meningitis | 30 |
| Not Poliomyelitis | 4 |
| | <hr/> |
| | 423 |

The 14 correlated cases occurring during the year are presented in Table II. A correlated case is defined as one in which the site of first paralysis is the same as the site of inoculation. No more than one correlated case has been found to follow the use of any single lot of vaccine. Of these cases, Type I poliovirus has been isolated from five.

There has been no indication of any break in vaccine safety during the year 1959.

B. Vaccine Distribution

A summary of current and cumulative data concerning vaccine released, shipped and inventoried is presented in Table III. Also included are releases and shipments of quadruple antigen.

(This report was prepared by the Poliomyelitis and Polio-Like Diseases Surveillance Unit, Harold W. Wylie, Jr., M.D., Chief, Joseph Oren, M.D., and Mr. Leo Morris, Statistician, with the assistance of the Statistics Section, CDC.)

Figure 1. CURRENT U.S. POLIO INCIDENCE
 compared with years 1956 through 1959

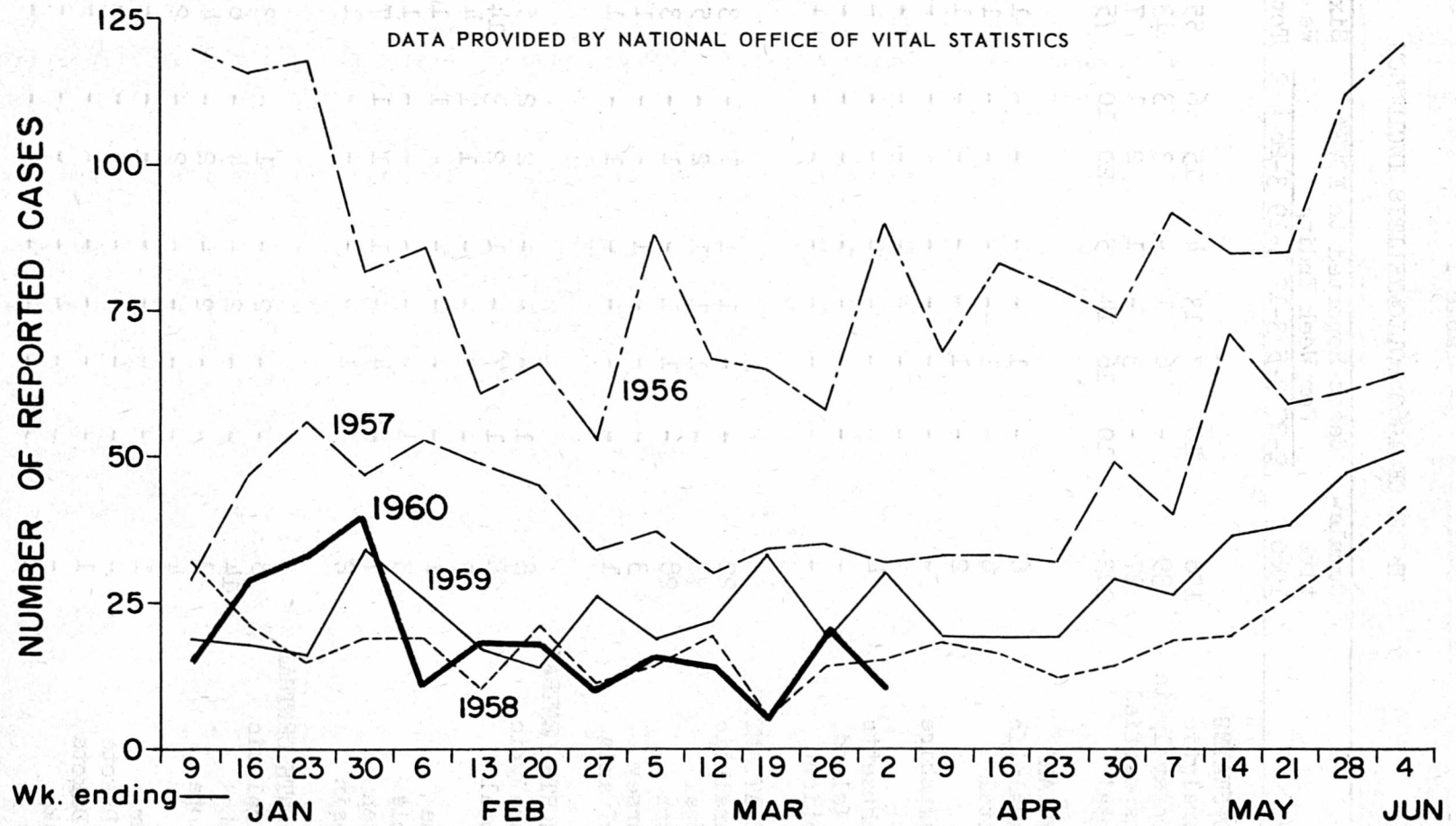


Table I

TREND OF 1960 POLIOMYELITIS INCIDENCE

| State and Region | Cumula- tive 1960 | Cases Reported to NOVS* | | | | | | Six Week Total | Comparable Six Weeks Totals in: | | |
|------------------------|-------------------------|-------------------------|-----|------|------|------|-----|----------------------|------------------------------------|------|------|
| | | For Week Ending | | | | | | | 1959 | 1958 | 1957 |
| | | 2-27 | 3-5 | 3-12 | 3-19 | 3-26 | 4-2 | | | | |
| UNITED STATES | | | | | | | | | | | |
| Paralytic | 156 | 10 | 7 | 13 | 4 | 15 | 6 | 55 | 106 | 44 | 92 |
| Nonparalytic | 39 | - | 6 | 1 | - | 3 | 3 | 13 | 28 | 21 | 76 |
| Unspecified | 27 | - | 3 | - | 1 | 2 | 1 | 7 | 15 | 13 | 35 |
| Total | 222 | 10 | 16 | 14 | 5 | 20 | 10 | 75 | 149 | 78 | 203 |
| NEW ENGLAND | | | | | | | | | | | |
| Paralytic | 6 | - | 1 | - | - | - | - | 1 | 2 | 1 | - |
| Total | 6 | - | 1 | - | - | - | - | 1 | 2 | 3 | 1 |
| Maine | 2 | - | 1 | - | - | - | - | 1 | - | - | - |
| New Hampshire | - | - | - | - | - | - | - | - | - | - | - |
| Vermont | - | - | - | - | - | - | - | - | - | - | - |
| Massachusetts | 4 | - | - | - | - | - | - | - | 1 | 1 | 1 |
| Rhode Island | - | - | - | - | - | - | - | - | - | - | - |
| Connecticut | - | - | - | - | - | - | - | - | 1 | 2 | - |
| MIDDLE ATLANTIC | | | | | | | | | | | |
| Paralytic | 22 | - | - | 1 | 1 | 1 | - | 3 | 4 | 1 | 3 |
| Total | 32 | - | 1 | 1 | 1 | 2 | - | 5 | 7 | 1 | 9 |
| New York | 28 | - | 1 | 1 | - | 1 | - | 3 | 7 | 1 | 4 |
| New Jersey | 3 | - | - | - | 1 | - | - | 1 | - | - | 1 |
| Pennsylvania | 1 | - | - | - | - | 1 | - | 1 | - | - | 4 |
| EAST NORTH CENTRAL | | | | | | | | | | | |
| Paralytic | 8 | 1 | - | - | - | 2 | 2 | 5 | 5 | 3 | 7 |
| Total | 28 | 1 | 7 | - | 1 | 2 | 3 | 14 | 10 | 9 | 22 |
| Ohio | 15 | - | 2 | - | - | 1 | 1 | 4 | 7 | 2 | 1 |
| Indiana | 1 | - | - | - | - | - | 1 | 1 | - | 1 | 10 |
| Illinois | 3 | 1 | - | - | - | - | - | 1 | 1 | 2 | 2 |
| Michigan | 7 | - | 4 | - | 1 | 1 | 1 | 7 | 2 | 4 | 5 |
| Wisconsin | 2 | - | 1 | - | - | - | - | 1 | - | - | 4 |
| WEST NORTH CENTRAL | | | | | | | | | | | |
| Paralytic | 8 | - | - | 2 | - | 1 | - | 3 | 9 | 3 | 6 |
| Total | 14 | - | - | 2 | - | 4 | - | 6 | 21 | 3 | 21 |
| Minnesota | 8 | - | - | 2 | - | 2 | - | 4 | - | - | 1 |
| Iowa | 4 | - | - | - | - | 2 | - | 2 | - | - | - |
| Missouri | 1 | - | - | - | - | - | - | - | 16 | 1 | 3 |
| North Dakota | - | - | - | - | - | - | - | - | 1 | 1 | - |
| South Dakota | 1 | - | - | - | - | - | - | - | 1 | - | 2 |
| Nebraska | - | - | - | - | - | - | - | - | 2 | 1 | 10 |
| Kansas | - | - | - | - | - | - | - | - | 1 | - | 5 |

*National Office of Vital Statistics: weekly figures reported by the states as of Wednesday of the specified week; cumulative figures include revisions and corrections.

Table I (Continued)

| State and Region | Cumula- tive 1960 | Cases Reported to NOVS For Week Ending | | | | | | Six Week Total | Comparable Six Weeks Totals in | | |
|------------------------|-------------------------|---|-----|------|------|------|-----|----------------------|-----------------------------------|------|------|
| | | 2-27 | 3-5 | 3-12 | 3-19 | 3-26 | 4-2 | | 1959 | 1958 | 1957 |
| SOUTH ATLANTIC | | | | | | | | | | | |
| Paralytic | 33 | 2 | 1 | 2 | - | 3 | 2 | 10 | 26 | 12 | 7 |
| Total | 42 | 2 | 1 | 3 | - | 3 | 2 | 11 | 33 | 14 | 22 |
| Delaware | 1 | - | - | - | - | - | - | - | 2 | 1 | 1 |
| Maryland | 1 | - | - | 1 | - | - | - | 1 | - | - | - |
| D. C. | - | - | - | - | - | - | - | - | - | - | - |
| Virginia | - | - | - | - | - | - | - | - | - | - | 4 |
| West Virginia | 3 | - | - | - | - | - | 1 | 1 | 6 | 2 | 1 |
| North Carolina | 12 | - | 1 | - | - | - | - | 1 | 3 | 2 | 2 |
| South Carolina | 2 | 1 | - | - | - | - | - | 1 | 4 | 1 | 3 |
| Georgia | 2 | - | - | - | - | 1 | - | 1 | 1 | 2 | 3 |
| Florida | 21 | 1 | - | 2 | - | 2 | 1 | 6 | 17 | 6 | 8 |
| EAST SOUTH CENTRAL | | | | | | | | | | | |
| Paralytic | 7 | - | - | 3 | - | 1 | - | 4 | 7 | 2 | 9 |
| Total | 8 | - | - | 3 | - | 1 | - | 4 | 11 | 5 | 12 |
| Kentucky | 6 | - | - | 2 | - | 1 | - | 3 | 2 | 1 | - |
| Tennessee | - | - | - | - | - | - | - | - | 4 | 2 | 2 |
| Alabama | 1 | - | - | 1 | - | - | - | 1 | - | 1 | 4 |
| Mississippi | 1 | - | - | - | - | - | - | - | 5 | 1 | 6 |
| WEST SOUTH CENTRAL | | | | | | | | | | | |
| Paralytic | 9 | 1 | - | - | - | 1 | - | 2 | 26 | 6 | 31 |
| Total | 14 | 1 | - | - | - | 1 | 1 | 3 | 31 | 13 | 51 |
| Arkansas | 3 | - | - | - | - | - | - | - | 5 | 1 | 1 |
| Louisiana | 5 | 1 | - | - | - | 1 | - | 2 | 9 | - | 12 |
| Oklahoma | 1 | - | - | - | - | - | - | - | - | 3 | 4 |
| Texas | 5 | - | - | - | - | - | 1 | 1 | 17 | 9 | 34 |
| MOUNTAIN | | | | | | | | | | | |
| Paralytic | 7 | 2 | - | - | 1 | - | - | 3 | 3 | 4 | 6 |
| Total | 11 | 2 | - | - | 1 | - | - | 3 | 5 | 7 | 17 |
| Montana | 4 | - | - | - | - | - | - | - | - | - | - |
| Idaho | 4 | - | - | - | - | - | - | - | - | - | 1 |
| Wyoming | - | - | - | - | - | - | - | - | 1 | 1 | 1 |
| Colorado | - | - | - | - | - | - | - | - | 1 | 3 | 2 |
| New Mexico | - | - | - | - | - | - | - | - | 1 | 3 | - |
| Arizona | 2 | 2 | - | - | - | - | - | 2 | 2 | - | 9 |
| Utah | 1 | - | - | - | 1 | - | - | 1 | - | - | 4 |
| Nevada | - | - | - | - | - | - | - | - | - | - | - |
| PACIFIC | | | | | | | | | | | |
| Paralytic | 56 | 4 | 5 | 5 | 2 | 6 | 2 | 24 | 24 | 12 | 23 |
| Total | 67 | 4 | 6 | 5 | 2 | 7 | 4 | 28 | 29 | 23 | 48 |
| Alaska | - | - | - | - | - | - | - | - | - | - | 1 |
| Washington | 6 | - | 1 | - | - | 2 | - | 3 | 3 | 2 | 1 |
| Oregon | 11 | - | - | 1 | 2 | - | 1 | 4 | 1 | 4 | 5 |
| California | 49 | 4 | 5 | 4 | - | 5 | 3 | 21 | 25 | 17 | 41 |
| Hawaii | 1 | - | - | - | - | - | - | - | - | - | - |
| Puerto Rico | 25 | 1 | - | 6 | 4 | 3 | 1 | 15 | 1 | 7 | - |

Table II

1959 Under-30 Day Cases With Correlation of
Site of Inoculation and Site of Paralysis

| State | County | Ini- tials | Age | Sex | Date Inoc. | Date First Symp. | Mfr. | Lot No. | Limb |
|----------|--------------|---------------|------|-----|---------------|------------------------|-------|---------|--------|
| Calif. | San Luis | M.M. | 1 | M | 8-4-59 | 8-14-59 | ? | ? | R. Leg |
| Calif. | Alameda | R.H. | 20 | M | 9-2-59 | 9-6-59 | P-D | 052264A | L. Arm |
| Conn. | New Haven | G.G. | 3 | F | 8-17-59 | 8-20-59 | Lilly | 746983 | L. Arm |
| Florida | Pasco | D.P. | 31 | F | 6-1-59 | 6-2-59 | Lilly | 735482 | R. Arm |
| Florida | Hillsborough | C.T. | 2 | M | 6-15-59 | 6-25-59 | S&D | ? | L. Leg |
| Georgia | Heard | S.A. | 3 | M | 8-5-59 | 8-8-59 | S&D | 55636 | R. Leg |
| Indiana | Lake | G.S. | 2 | M | 7-20-59 | 7-27-59 | Lilly | ? | L. Arm |
| Mass. | Hampden | D.L. | 2 | M | 9-23-59 | 10-10-59 | ? | ? | L. Leg |
| Missouri | Jackson | P.M. | 5 | F | 7-6-59 | 7-28-59 | S&D | 43046 | L. Arm |
| Nebraska | Lancaster | D.H. | 1 | M | 6-2-59 | 6-11-59 | P-M | 175A126 | L. Leg |
| N. Y. | Suffolk | M.F. | 33 | F | 7-31-59 | 8-3-59 | S&D | 43046 | R. Arm |
| N. C. | Beaufort | J.B. | 7 mo | M | 6-26-59 | 6-28-59 | P-M | ? | L. Leg |
| N. C. | Durham | T.C. | 9 mo | M | 8-18-59 | 8-21-59 | P-M | 175B128 | L. Leg |
| N. C. | Wake | R.N. | 3 | M | 6-22-59 | 7-11-59 | P-M | ? | R. Arm |

Table III

POLIOMYELITIS AND QUADRUPLE ANTIGEN VACCINE REPORTS*

(Data provided by the Polio Vaccine Activity, BSS, USPHS through April 1, 1960)

POLIOMYELITIS VACCINE SHIPPED (1000's cc's)

| Period | National Foundation | Public Agencies | Commercial Channels | Export | Total |
|--------------------|------------------------|--------------------|------------------------|--------|---------|
| 1955 | 13,541 | 7,893 | 6,223 | - | 27,667 |
| 1956 | 194 | 45,588 | 24,784 | 6,477 | 77,043 |
| 1957 | 154 | 50,026 | 38,062 | 12,784 | 101,026 |
| 1958 | 203 | 18,533 | 28,319 | 33,571 | 80,626 |
| 1959 | 160 | 26,160 | 37,553 | 21,161 | 85,034 |
| 1960 | | | | | |
| January | - | 844 | 843 | 619 | 2,306 |
| February | - | 1,617 | 1,409 | 1,303 | 4,329 |
| <u>Week Ending</u> | | | | | |
| 3-4 | - | 289 | 632 | 139 | 1,060 |
| 3-11 | - | 176 | 673 | 180 | 1,029 |
| 3-18 | - | 643 | 592 | 237 | 1,472 |
| 3-25 | - | 455 | 588 | 262 | 1,305 |
| Total to date | - | 4,024 | 4,737 | 2,740 | 11,501 |
| Cumulative | | | | | |
| Total | 14,252 | 152,224 | 139,678 | 76,733 | 382,887 |

*Excludes amounts of outdated unshipped vaccine.

QUADRUPLE ANTIGEN VACCINE SHIPPED (in cc's)

| Period | Public Agencies | Commercial Channels | Export | Total |
|--------------------|--------------------|------------------------|---------|-----------|
| 1959 | 157,251 | 4,019,577 | 59,143 | 4,235,971 |
| 1960 | | | | |
| January | 41,813 | 423,935 | 121 | 465,869 |
| February | 25,563 | 358,609 | 22,891 | 407,063 |
| <u>Week Ending</u> | | | | |
| 3-4 | 20,871 | 114,899 | 27,301 | 163,071 |
| 3-11 | 3,960 | 94,918 | 248 | 99,126 |
| 3-18 | 4,824 | 101,745 | 4,554 | 111,123 |
| 3-25 | 3,483 | 105,003 | 9,405 | 117,891 |
| Total to date | 100,514 | 1,199,109 | 64,520 | 1,364,143 |
| Cumulative | | | | |
| Total | 257,765 | 5,218,686 | 123,663 | 5,600,114 |

