

COMMUNICABLE DISEASE CENTER

# POLIOMYELITIS

## SURVEILLANCE

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# PREFACE

Summarized in this report is information received from State Health Departments, university investigators, virology laboratories and other pertinent sources, domestic and foreign. Much of the information is preliminary. It is intended primarily for the use of those with responsibility for disease control activities. Anyone desiring to quote this report should contact the original investigator for confirmation and interpretation.

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## SUMMARY

Poliomyelitis remains at its usual low incidence during the winter months with 24 cases, 14 paralytic, reported during the first three weeks of 1962. Narrative reports are included from New York and Pennsylvania in Section 2.

In Section 3, a progress report on submission of 1961 poliomyelitis surveillance case records and poliovirus isolations is presented.

Featured in the Foreign Report section is the Kingston upon Hull type 1 poliomyelitis epidemic which occurred in England during September and October, 1961. The community-wide immunization program with type II oral poliovaccine undertaken during the course of this epidemic is described. Also included in this section is a further report on the poliomyelitis epidemic in Santiago, Chile.

### 1. CURRENT POLIOMYELITIS MORBIDITY TRENDS

During the first three weeks of 1962, 26 cases of poliomyelitis, 14 paralytic, have been reported to the CDC Morbidity and Mortality Unit on weekly telegrams (See Table 1). Only 8 States have contributed to this total with New York reporting 14 of the 26 cases. A report on New York is presented in Section 2.

Since January 1, 1962, cases designated as delayed 1961 reports by the States in their weekly telegraphic reports, have been assigned to prior weekly totals. By this procedure, which was inaugurated last year, the current figures more accurately reflect the actual weekly incidence of poliomyelitis in the United States.

The six week total (50th week of 1961 through the 3rd week of 1962) reflect the low winter incidence of poliomyelitis.

#### SIX WEEK TOTALS (50th through 3rd week) FOR PAST FIVE YEARS

	<u>1962</u>	<u>1961</u>	<u>1960</u>	<u>1959</u>	<u>1958</u>
Paralytic	44	95	216	176	100
Total	72	164	292	281	175

### 2. REPORTS

#### A. New York State

Dr. Robert M. Albrecht, Director, Office of Epidemiology, New York State Department of Health reports that only one of the 14 cases of poliomyelitis reported during the first 3 weeks of 1962 had onset in 1962.

Of the 17 cases reported by New York State during the past 4 weeks, 9 cases with onset in November and December occurred in three different counties. Four cases were reported from Fulton County, three from Albany County and two from Chautauqua County. Type 1 poliovirus has been isolated from 2 of the cases in Albany County.

One of the two Chautauqua County cases was a 23 month old female, who had onset of paralytic poliomyelitis on December 14 in the town of Clymer. This infant has not received oral vaccine and has had 3 doses of inactivated vaccine. The second Chautauqua case is a 56 year old male in Jamestown with onset on December 30. This case had 1 dose of inactivated vaccine and received type I oral vaccine on November 30. A previous case of poliomyelitis occurred in Chautauqua County in October. In Chautauqua County, 70,000 persons were fed type I oral vaccine on November 30 and December 9.

**B. Pennsylvania**

Type I poliovirus accounted for 54 percent of the positive poliovirus isolations from cases of poliomyelitis in 1961. Dr. I. F. Gratch, Epidemiologist, Pennsylvania Department of Health, reports that of a preliminary total of 53 cases of poliomyelitis in 1961, 28 yielded poliovirus isolates: 15 type I and 13 type III. This is in sharp contrast to the Pennsylvania experience in 1960 when type III poliovirus accounted for approximately 75 percent of isolates; in 1960, type III was especially prominent in western Pennsylvania in Allegheny and Somerset Counties and their vicinity. In 1961, however, type III was isolated most frequently from Schuylkill County cases (seven type III isolated) in eastern Pennsylvania. Erie County contributed the largest county total of type I isolates (six); this county was the scene of a concentration of paralytic poliomyelitis in September - October (See PSU Report No. 245). Other isolates were scattered in the State.

**3. 1961 POLIOMYELITIS REPORTED TO PSU**

**A. Poliomyelitis Surveillance Case Records**

The cumulative total of poliomyelitis cases (onset in 1961) reported to the Poliomyelitis Surveillance Unit on individual case forms now stands at 1179 through January 20, 1962. Of these 1179 cases, 845 are paralytic, 273 nonparalytic and 61 unspecified as to paralytic status. This total represents 89 percent of the 1327 cases reported by weekly telegrams to the CDC Morbidity and Mortality Unit at the close of the year as shown below:

Reported to CDC-MMU (Preliminary 1961 figures)	PSU Forms Received (thru 1/20/62)	Percent
Paralytic	864	845
Nonparalytic	314	273
Unspecified	149	61
<b>TOTAL</b>	<b>1327</b>	<b>1179</b>
		88.8

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Cooperation by the State epidemiologists in the submission of both preliminary and 60-day follow-up reports has been excellent as it was last year when the PSU received 100 percent of the reported cases on preliminary forms and follow-up clinical evaluation on 94 percent. Thus far, such 60-day follow-ups have been received on 72 percent of the cases with 1961 onset. The follow-up reporting has improved as we approach our cut-off date of February 28, 1962, with only a few States accounting for most of the PSU forms not yet submitted.

States with more than 5 cases who have essentially completed their preliminary submission of 1961 PSU forms through January 20, 1962 are as follows:

Alabama	Mississippi
Arizona	Nebraska
Arkansas	New York
Colorado	North Carolina
Florida	Ohio
Idaho	Oregon
Indiana	Pennsylvania
Iowa	South Carolina
Kansas	Vermont
Kentucky	Virginia
Louisiana	Washington
Maine	West Virginia
Minnesota	Wisconsin

The cases reported to PSU are presented below in Table 3A by paralytic status, age group and vaccination history.

Table 3A

1961 POLIOMYELITIS CASES BY PARALYTIC STATUS, AGE GROUP  
AND VACCINATION HISTORY REPORTED ON PSU FORMS  
(Through January 20, 1962)

Age Group	Paralytic						Percent
	Doses of Vaccine						
0-4	181	26	26	33	27	20	37.0
5-9	59	12	20	43	37	8	21.2
10-14	28	5	13	22	24	7	11.7
15-19	17	1	8	19	5	2	6.2
20-29	63	6	7	16	5	3	11.8
30-39	44	6	5	3	3	8	8.2
40+	25	1	0	2	1	4	3.9
TOTAL	417	57	79	138	102	52	845
PERCENT							100.0
DOSES	52.6	7.2	10.0	17.4	12.9	-	100.0

Table 3A (Continued)

**1961 POLIOMYELITIS CASES BY PARALYTIC STATUS, AGE GROUP  
AND VACCINATION HISTORY REPORTED ON PSU FORMS  
(Through January 20, 1962)**

Age Group	Nonparalytic						Percent	
	0	1	2	3	4+	Unk	TOTAL	
0-4	19	4	9	8	6	3	49	17.9
5-9	16	0	8	18	29	6	77	28.2
10-14	5	5	6	16	18	6	56	20.5
15-19	5	1	4	6	7	2	25	9.2
20-29	11	0	5	15	9	5	45	16.5
30-39	11	0	0	4	1	2	18	6.6
40+	0	0	0	0	2	1	3	1.1
<b>TOTAL</b>	<b>67</b>	<b>10</b>	<b>32</b>	<b>67</b>	<b>72</b>	<b>25</b>	<b>273</b>	<b>100.0</b>
<b>PERCENT</b>								
<b>DOSES</b>	<b>27.0</b>	<b>4.0</b>	<b>12.9</b>	<b>27.0</b>	<b>29.0</b>	<b>-</b>	<b>100.0</b>	

**B. Poliovirus Isolations**

Of the 1179 cases reported to PSU, laboratory reports of attempted viral isolation have been received on 540 cases. Sixty-six percent (359 out of 540) have yielded a poliovirus isolation with type I poliovirus being slightly more prevalent. Of the 359 isolations reported, 55 percent are type I, and 44 percent type III. The remaining one percent has been due to type II. The isolations are shown below by State.

New York and Louisiana continue to account for over half the type I isolations. One-third of the type III isolations are from Maryland and South Carolina, two States with rural outbreaks during 1961. The 4 type II isolations are from cases in 4 widely separated States; all four cases were unvaccinated.

Table 3B

**POLIOVIRUS ISOLATIONS BY STATE\***

State	Type I	Type II	Type III	TOTAL
Alabama	-	-	8	8
Arkansas	4	-	1	5
California	9	-	3	12
Connecticut	3	-	-	3
Dist. of Col.	-	-	3	3
Florida	5	-	3	8
Georgia	1	-	9	10
Hawaii	2	-	-	2
Idaho	2	1	3	6
Indiana	3	-	-	3

Table 3B (Continued)

## POLIOVIRUS ISOLATIONS BY STATE\*

State	1940	1941	Type I (avg.)	Type II	Type III	1942	TOTAL
Kentucky	111	111	1	31	1	16	12
Louisiana	29	29	29	29	29	29	36
Maryland	1	1	1	1	26	26	27
Michigan	3	3	3	3	10-31-1	10-31-1	4
Minnesota	2	2	2	2	4	4	6
Mississippi	8	8	8	8	2	2	10
Missouri	1	1	1	1	1	1	3
New Hampshire	1	1	1	1	1	1	1
New Jersey	3	3	3	3	4	4	7
New York	73	73	73	73	8	8	81
North Carolina	-	-	-	-	2	2	2
Ohio	12	12	12	12	3	3	15
Oregon	1	1	1	1	3	3	5
Pennsylvania	12	12	12	12	13	13	25
Rhode Island	1	1	1	1	-	-	1
South Carolina	1	1	1	1	24	24	25
Tennessee	2	2	2	2	4	4	6
Texas	2	2	2	2	-	-	2
Utah	2	2	2	2	1	1	3
Vermont	5	5	5	5	-	-	5
Virginia	6	6	6	6	1	1	6
Washington	2	2	2	2	3	3	3
West Virginia	5	5	5	5	-	-	5
Wisconsin	2	2	2	2	10	10	13
<b>TOTAL</b>	<b>197</b>	<b>197</b>	<b>197</b>	<b>197</b>	<b>158</b>	<b>158</b>	<b>359</b>
<b>PERCENT</b>	<b>54.9</b>	<b>54.9</b>	<b>54.9</b>	<b>54.9</b>	<b>44.0</b>	<b>44.0</b>	<b>100.0</b>

\* From 1961 cases reported to PSU through January 20, 1962.

#### 4. ROUTINE POLIOMYELITIS SURVEILLANCE - 1961

#### **A. Cases With Onset Within 30 Days of Vaccination (Inactivated)**

During the four week period from December 24, 1961 to January 20, 1962, five cases of poliomyelitis with onset within 30 days of receiving inactivated vaccine (IPV) have been reported to the Poliomyelitis Surveillance Unit. This brings the 1961 total of IPV under-30-day cases to 35, of which 24 are paralytic (two correlated).

Of the 5 cases reported, 3 are paralytic and 2 nonparalytic. The 3 paralytic cases are from different States and are listed below:

<u>State</u>	<u>Age</u>	<u>Sex</u>	<u>Date</u>	<u>Onset Interval</u>	<u>Lot</u>	<u>Mfr.</u>	<u>No.</u>	<u>Correlated</u>
			<u>Inoculated</u>	<u>(Days)</u>				
Arkansas	1	M	8-28-61	16	I	Lilly	1134-778984	Unknown
California	4mos	M	11-21-61	8	I	Unk.	Unk.	No
New York	11	F	10-12-61	1	I	Unk.	Unk.	Unk.

**B. Cases With Onset Within 30 Days of Vaccination (Oral)**

Two additional cases of paralytic poliomyelitis with onset within 30 days of receiving oral vaccine (OPV) have been reported to the Polio-myelitis Surveillance Unit during the four week period ending January 20, 1962. This brings the 1961 total of OPV under-30-day cases to 33, of which 25 are paralytic.

One of the two cases occurred in Newberry County, South Carolina, scene of a mass immunization program under epidemic conditions in October, 1961; the other case occurred in Chautauqua County, New York, a non-epidemic area, where an immunization campaign was undertaken during December. Both cases, presented below, had previously received one dose of inactivated vaccine.

<u>State</u>	<u>Age</u>	<u>Sex</u>	<u>Type Fed</u>	<u>Date Fed</u>	<u>Onset Interval</u>	<u>Remarks</u>
					<u>(Days)</u>	
New York	56	M	Type I	11-30-61	30	Bulbar
So. Carolina	7	F	Type III	10-19-61	3	Minor Involvement

All of the 31 cases previously reported occurred in the Syracuse and Atlanta areas where immunization programs with oral vaccine had been conducted during an epidemic period.

**C. Vaccine Distribution**

A summary of current and cumulative shipments of poliomyelitis and multiple antigen vaccine through November, 1961, is presented in Table II at the end of this report.

A review of the vaccine shipments during 1961 will be presented in the next Poliomyelitis Surveillance Report.

5. FOREIGN REPORTS

A. England

The Poliomyelitis Surveillance Unit is pleased to publish a report of the sharp type I poliomyelitis epidemic which occurred in Kingston upon Hull, England, during September and October, 1961. Dr. George E. Godber, Chief Medical Officer, Ministry of Health, has sent an account detailing the community-wide immunization program undertaken during the epidemic.

"A provisional total of 89 cases of poliomyelitis, 78 paralytic and 11 non-paralytic, occurred at Kingston upon Hull. Of this total, the dates of onset of 88 cases ranged from 11th September to 29th October and constituted the main part of the outbreak. The additional case, with onset 4th December, occurred five weeks after. The outbreak including the latter case was due to Type 1 polio virus.

"The attached chart (histogram on page 8) shows the distribution of the clinically confirmed cases by dates of onset of illness and oral vaccination state - excluding the last case who was given oral vaccine on 19th October.

"In the adjacent Urban District of Haltemprice 6 cases, all paralytic, have been confirmed with dates of onset ranging from 11th to 18th October. One non-paralytic case occurred in Withernsea Urban District and 3 cases (2 paralytic and 1 non-paralytic), with dates of onset ranging from 18th to 27th October, in neighbouring parishes of Holderness Rural District in the East Riding of Yorkshire. These cases were also caused by polio virus Type 1.

"Following discussions between the Medical Officer of Health of Hull and officers of the Ministry of Health on 11th October a formal request for oral vaccine to control the outbreak was made on 12th October. This was immediately granted, arrangements for the supply of Sabin Type 2 vaccine were made and the necessary campaign organization at Hull started.

"The emergency use of this heterotypic oral vaccine began on the evening of 17th October and from 5.0 p.m. to 9.0 p.m., or later at some vaccination centres, 78,000 persons of all ages attended. On the 18th October 157,000 persons were vaccinated in about 12 hours. On 19th October the total was 71,400. Subsequent demand for the vaccine was relatively light but centres continued in operation as originally planned until 24th October. The total number of persons vaccinated in this 7 day campaign exceeded 350,000, the bulk of whom had received the vaccine during the first 48 hours. A subsequent check of records gave a figure of 292,000 residents of Hull (96% of the entire population) and more than 50,000 persons from outside the city.

"The programme of oral vaccination was subsequently extended to Haltemprice Urban District where 10,000 persons were vaccinated from 23rd to 25th October, and to Withernsea Urban District and adjacent parishes in Holderness Rural District where about 5,000 persons were vaccinated from 25th to 27th October.

**POLIOMYELITIS BY DATE OF ONSET**  
Kingston upon Hull, England

"The vaccine was administered on sugar cubes in a dose of two drops after dilution. Technical and other considerations during the campaign resulted in alterations of the dilution and the following is a rough estimate of the numbers (to the nearest 5,000) of persons to whom the vaccine at different titres was administered.

$10^6$  T.C.I.D./50 per dose 85,000 persons

$10^{5.9}$  " " " 115,000

$10^{5.6}$  " " " 50,000 "

$10^{5.5}$  " " " 40,000 "

"It was decided that the mass vaccination with poliomyelitis Type 2 virus vaccine should be followed at intervals of 6 weeks by two feedings of trivalent oral vaccine to 'the priority groups' (i.e. those between the ages of 6 months and 40 years and certain other individuals at special risk) who had not previously started or completed a course of Salk vaccine. The number of persons concerned was approximately 60,000. The first dose of trivalent vaccine was offered from 30th November to 3rd December and the number of acceptances was about 30,000. The second dose of trivalent vaccine is scheduled for 11th January 1962."

#### B. Chile

The Chilean National Health Service received reports of only 9 and 11 cases of paralytic poliomyelitis from the province of Santiago for the first and second weeks, respectively, of 1962. This marks a sharp reduction in reported incidence of paralytic poliomyelitis in Santiago; it is still notably early in the polio season in the Southern Hemisphere. The table below shows the reported cases since week 42 in 1961. From December 5 to December 19, 1961, a total of 404,263 children from three months to seven years of age were fed type 1 oral vaccine. This represents 97 percent of the target age group.

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1961:	42	7
	43	12
	44	31
	45	35
	46	39
	47	83
	48	69
	49	62
	50	69
	51	37
	52	35
1962:	1	9
	2	11

Preliminary information reveals that only 6 of the 20 cases reported in January had onset of symptoms in January. Only one of the six received oral vaccine.

The cases continue to be concentrated in the pre-school age group with 90 percent under five years of age. The 420 cases presented in the last PSU Report (See PSU Report 249: 1-5-62) by age-specific attack rates are presented below by geographical area within the province of Santiago. The epidemic is shown to be predominantly urban with a much higher attack rate in the low socioeconomic southern area:

<u>Area</u>	<u>Estimated Population</u>	<u>Paralytic Cases</u>	<u>Rate/100,000</u>
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**URBAN:**

South	483,432	153	31.6
Central	448,205	77	17.2
East	377,002	56	14.9
West	425,898	60	14.1
North	391,974	52	13.3

**RURAL:**

Buin	125,184	10	7.9
S. Antonio	68,189	3	4.4
Puente Alto	87,639	3	3.4
Melipilla	62,207	2	3.2

**Area Unknown**

Area Unknown	4
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**TOTAL** 2,469,720 420 17.0

Vaccination programs have been completed in 5 other provinces and are in progress in 6 others. To date, approximately 782,000 children from 3 months to 7 years of age have been immunized with type 1 oral vaccine.

(The above information has been generously provided by the Sub-Department of Protection of Health, Chilean National Health Service: Dr. Conrado Ristori, Chief; Dr. Jose Borgono, Epidemiologist; and Dr. Horaccio Borcaddo, Epidemiologist.)

Figure 1

# CURRENT U.S. POLIO INCIDENCE COMPARED WITH YEARS 1957, 1959, and 1961

DATA PROVIDED BY NATIONAL OFFICE OF VITAL STATISTICS  
AND COMMUNICABLE DISEASE CENTER

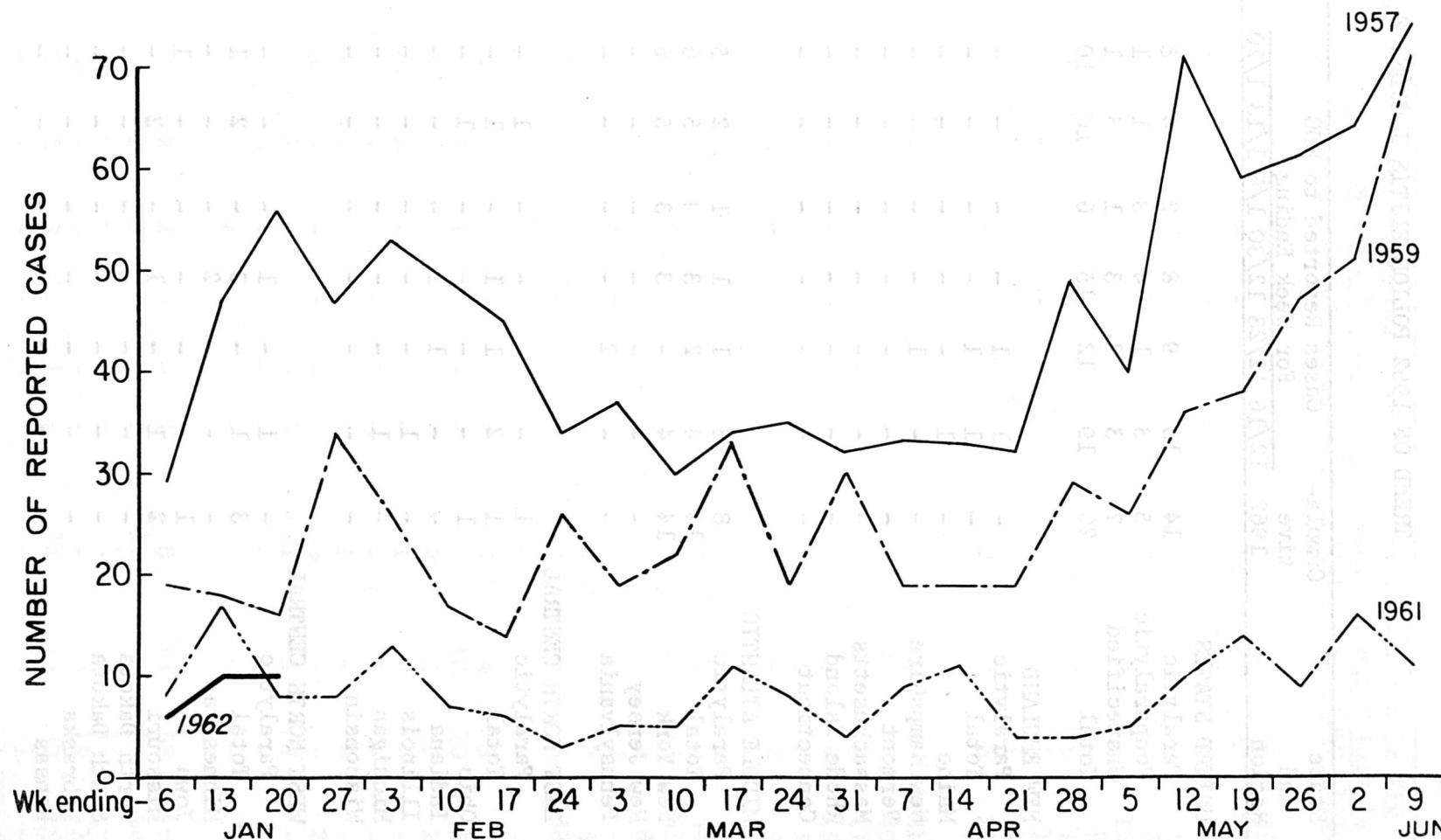


Table 1

#### TREND OF 1962 POLIOMYELITIS INCIDENCE

Table 1 (Continued)

State and Region	Cumula- tive 1962	Cases Reported To CDC For Week Ending					Six Week Total	Comparable Six Weeks Totals in		
		12/16	12/23	12/30	1/6	1/13	1/20	1961	1960	1959
<b>SOUTH ATLANTIC</b>										
Paralytic	1	1	2	-	-	-	1	4	21	36
Total	1	2	2	-	-	-	1	5	27	43
Delaware	-	-	-	-	-	-	-	-	1	-
Maryland	-	2	-	-	-	-	-	2	10	-
D.C.	-	-	-	-	-	-	-	-	1	3
Virginia	1	-	-	-	-	-	1	1	4	2
West Virginia	-	-	-	-	-	-	-	-	1	4
North Carolina	-	-	-	-	-	-	-	3	18	1
South Carolina	-	-	-	-	-	-	-	2	1	1
Georgia	-	-	-	-	-	-	-	2	11	-
Florida	-	-	2	-	-	-	-	2	4	6
<b>EAST SOUTH CENTRAL</b>										
Paralytic	-	2	1	-	-	-	-	3	3	13
Total	-	2	1	-	-	-	-	3	25	15
Kentucky	-	-	-	-	-	-	-	21	2	11
Tennessee	-	-	-	-	-	-	-	3	4	15
Alabama	-	-	-	-	-	-	-	1	2	5
Mississippi	-	2	1	-	-	-	-	3	-	7
<b>WEST SOUTH CENTRAL</b>										
Paralytic	1	1	-	4	-	1	-	6	8	9
Total	1	1	-	4	-	1	-	6	13	13
Arkansas	-	-	-	1	-	-	-	1	5	3
Louisiana	-	-	-	1	-	-	-	1	5	4
Oklahoma	-	-	-	-	-	-	-	-	3	5
Texas	1	1	-	2	-	1	-	4	3	48
<b>MOUNTAIN</b>										
Paralytic	1	2	2	-	1	-	-	5	4	8
Total	2	3	3	1	2	-	-	9	10	10
Montana	2	-	-	-	2	-	-	2	1	6
Idaho	-	-	1	-	-	-	-	1	2	-
Wyoming	-	-	-	-	-	-	-	-	1	-
Colorado	-	-	1	-	-	-	-	1	-	-
New Mexico	-	3	-	-	-	-	-	3	-	2
Arizona	-	-	1	-	-	-	-	1	1	4
Utah	-	-	-	-	-	-	-	5	-	-
Nevada	-	-	1	-	-	-	-	1	-	1
<b>PACIFIC</b>										
Paralytic	2	2	2	2	-	2	-	8	14	58
Total	4	3	2	3	1	1	2	12	23	69
Washington	-	1	-	-	-	-	-	1	8	11
Oregon	-	-	-	-	-	-	-	-	2	19
California	4	2	2	3	1	1	2	11	13	37
Alaska	-	-	-	-	-	-	-	-	-	1
Hawaii	-	-	-	-	-	-	-	-	-	4
<b>TERRITORY</b>										
Puerto Rico	-	-	-	-	-	-	-	2	3	1

Table II  
THE NATIONAL FOUNDATION

MONTHLY REPORT OF POLIOMYELITIS VACCINE RELEASED AND SHIPPED  
(1,000 cc's)

November 1961

	SINGLE ANTIGEN		MULTIPLE ANTIGEN		TOTAL	
	This Month	To Date	This Month	To Date	This Month	To Date
CC. Released	1,144	508,654	0	15,586	1,144	524,240
<b>CC. Shipped:</b>						
National Foundation	0	14,261	0	0	0	14,261
Public Agencies	711	182,528	0	1,416	711	183,944
Commercial Channels	547	185,399	16	13,385	553	198,784
Domestic Total	1,258	382,188	6	14,801	1,264	396,989
Export	283	109,811	0	634	283	110,445

CC. UNSHIPPED END OF MONTH\*  
(1,000 cc's)

	<u>1960</u>	<u>1961</u>
January	19,459	14,755
February	20,965	15,737
March	27,062	13,414
April	27,216	10,887
May	24,846	6,448
June	24,620	6,558
July	23,830	4,233
August	24,525	4,599
September	23,091	6,181
October	19,565	5,543
November	16,319	5,139
December	15,669	

\* Excludes outdated vaccine removed from inventory.