

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Public Health Service Bureau of State Services
Communicable Disease Center
Epidemiology Branch
Atlanta 22, Georgia

June 5, 1961

To: All State Epidemiologists
From: Chief, Epidemiology Branch
Subject: Enterovirus Surveillance

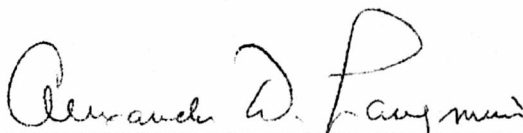
I am writing this memorandum to call attention to the section on enterovirus surveillance published in the attached PSU Report No. 224. Those of you who were in Atlanta for the Biennial Conference of State and Territorial Epidemiologists will remember the discussions that were held. We believe that the present plans as outlined are in accord with the views expressed at that conference.

No special form is recommended for reporting of this information. We believe a simple letter or narrative report from you will suffice. If the preliminary PSU form is about to be forwarded when the laboratory report comes in, it may quite simply be added to the PSU form.

Many times, however, the laboratory report will come in later. We do not recommend holding the preliminary PSU report for such laboratory results.

Also, interesting and pertinent laboratory data will come to you on patients with diseases other than poliomyelitis, and from family contacts, sewage specimens, and other sources. These data are all of special interest and importance in enterovirus surveillance.

When you report laboratory findings, please be sure to indicate the source of the report and whom we should acknowledge when we consolidate the findings in the Morbidity and Mortality Weekly Reports and PSU Reports.


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CDC

POLIOMYELITIS SURVEILLANCE REPORT

FOR ADMINISTRATIVE USE

REPORT NO. 224

June 5, 1961

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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, 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.

SUMMARY

There was a decrease in poliomyelitis case reporting during the 21st week ending May 27 with telegraphic reports of 9 cases, 6 paralytic.

An unusual incidence of paralytic cases in the greater San Francisco Bay Area has been noted, and the onset in May of 3 paralytic cases in Bexar County, Texas, has been reported.

A tabular summary of 1960 poliomyelitis fatalities recorded by PSU is included.

Bids for oral poliovaccine have been requested from prospective manufacturers by the CDC to implement the epidemic reserve program.

An important statement on the expansion of the Poliomyelitis Surveillance Unit's activities into enterovirus surveillance is included.

1. CURRENT POLIOMYELITIS MORBIDITY TRENDS

Poliomyelitis case reporting decreased during the 21st week ending May 27. A total of 9 cases, 6 paralytic, was compiled from telegraphic reports received from the States, a decrease from the 14 cases, 10 paralytic, recorded during the previous week. This brings the nation-wide total to 171 cases, 111 paralytic, the lowest in recent years as shown below.

POLIO (CUMULATED WEEKLY) THROUGH THE 21st WEEK FOR PAST FIVE YEARS

	<u>1961</u>	<u>1960</u>	<u>1959</u>	<u>1958</u>	<u>1957</u>
Paralytic	111	225	370	198	448
Total	171	312	530	379	910

Texas reported 2 cases, 1 paralytic in Bexar County and 1 nonparalytic in Jefferson County. California also accounted for 2 cases, both paralytic from San Francisco. Single case reports were received from Illinois, Michigan, Missouri, Louisiana and Oregon.

No outbreaks have been reported.

2. REPORTS

A. California

The greater San Francisco Bay Area encompassing 9 counties has accounted for 13 of the 23 paralytic cases in California with onset in 1961. According to Dr. Henry R. Renteln, Surveillance Unit, Bureau of Acute Communicable Diseases, California State Department of Public Health, careful surveillance of this area is being maintained because of this somewhat disconcerting incidence so early in the year. At this time in 1960 only 6 cases had occurred in this area.

Preliminary analysis of these cases shows an adult age distribution with many unvaccinated and inadequately vaccinated cases. Two deaths have occurred, both bulbo-spinal cases involving patients over 30 years of age. No localization within any one county is apparent. Laboratory studies have been done, but reports are not yet available.

B. Texas

Three paralytic cases in Bexar County, Texas, have been reported during the past 2 weeks. Two of these have residence in San Antonio and one in an outlying area of the county. Dr. Van C. Tipton, Director, Division of Communicable Disease Control, Texas State Department of Health, states that 2 pre-school age children and one young adult are involved, all unvaccinated or inadequately vaccinated. Two cases have had onset in mid-May, and the third case has a probable May onset. The results of virologic investigation are unknown as yet.

3. 1960 POLIOMYELITIS FATALITIES REPORTED TO PSU

During 1960 a total of 210 poliomyelitis fatalities was reported to the Poliomyelitis Surveillance Unit on individual case forms. An analysis of these by age group and vaccination history is presented in the following table.

Poliomyelitis Fatalities by Age Group
and Vaccination History, United States 1960

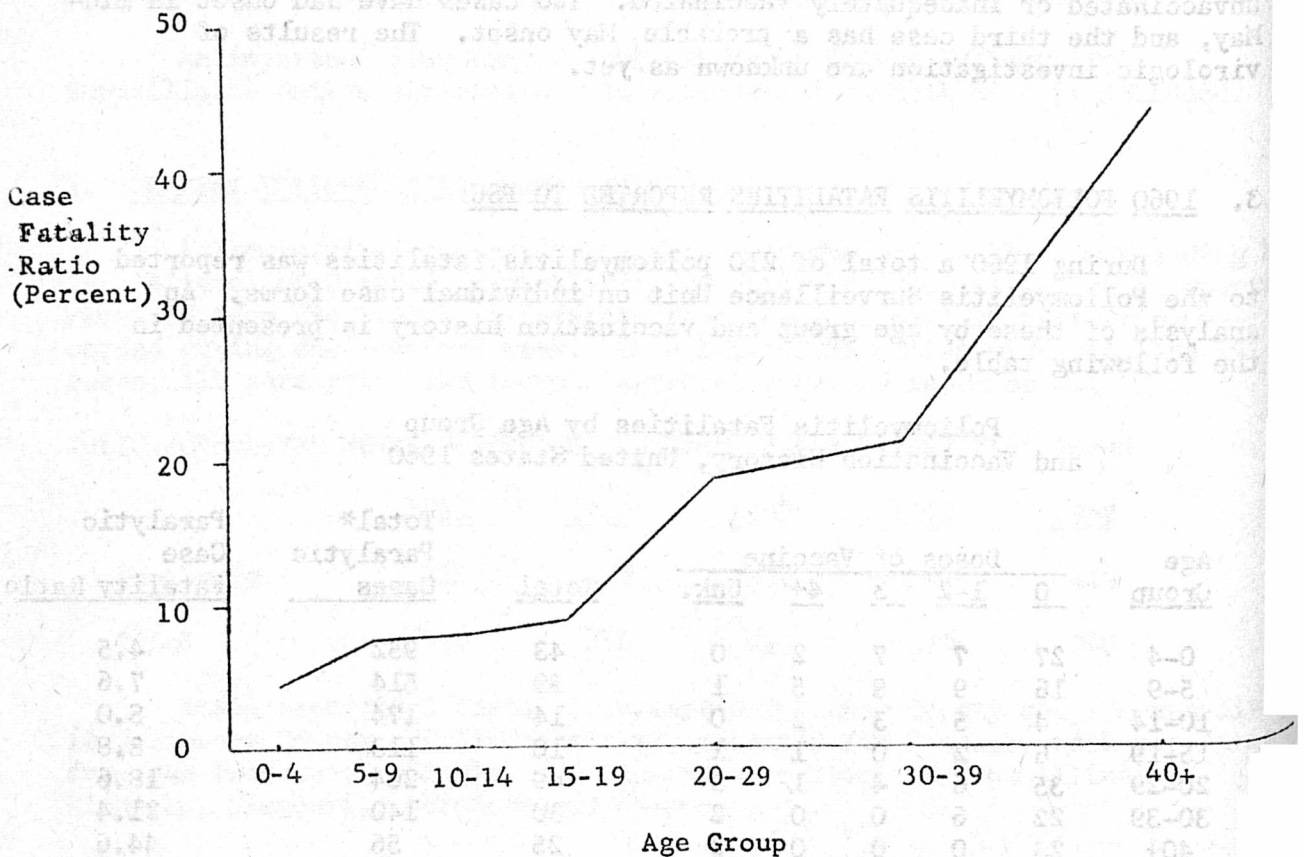
Age Group	Doses of Vaccine					Total	Total* Paralytic Cases	Paralytic Case Fatality Ratio
	0	1-2	3	4+	Unk.			
0-4	27	7	7	2	0	43	952	4.5
5-9	16	9	8	5	1	39	514	7.6
10-14	4	5	3	2	0	14	174	8.0
15-19	6	2	0	1	1	10	113	8.8
20-29	35	6	4	1	3	49	264	18.6
30-39	22	6	0	0	2	30	140	21.4
40+	23	0	0	0	2	25	56	44.6
Unk.	0	0	0	0	0	0	5	-
TOTAL	133	35	22	11	9	210	2218	9.5

Percent**
doses 66.2 17.4 10.9 5.5 - 100.0

* Cases with residual paralysis reported to PSU, CDC
** Of those fatalities with known vaccination status.

More than 60 percent of fatalities occurred among vaccinated persons; 18 percent of deaths occurred among the triply vaccinated individuals. These proportions are roughly similar to those observed among total reported paralytic cases (PSU Report No. 223). Adjustment for the markedly different age distribution of the cases and the deaths and the vaccination status of the population are necessary to the full interpretation of these data.

Over 50 percent of fatalities occurred in the age groups 15 years and older. The following graph depicts paralytic case fatality ratios and illustrates the steadily rising trend among older age groups.



An overall ratio of 9.5 percent was evident, but age at onset clearly affected survival with a 10-fold increase with rising age from a ratio of 4.5 percent in pre-school children to 44.6 percent in those over 40 years of age.

4. ROUTINE POLIOMYELITIS SURVEILLANCE - 1961

A. Cases with onset within 30 days of vaccination

There has been one under-30-day case reported to the Poliomyelitis Surveillance Unit during the initial five months in 1961. This paralytic case is a 33-year old male from San Francisco County, California. Vaccination was received on 5-16-61 in the left arm with onset of illness on 5-19-61. Paralysis developed in both shoulders. The vaccine used was Wyeth, Lot Number 38204. No other under 30-day-cases associated with this lot have been reported.

B. Vaccine distribution

The summary of current and cumulative shipments of poliomyelitis and multiple antigen vaccines is presented in Table II.

5. BIDS FOR ORAL POLIOVACCINE

On May 26, the C.D.C. advertised for bids to deliver a maximum of 2,700,000 doses of oral poliovaccine to the Public Health Service for epidemic control. Bids will be opened on June 9, and it is hoped that contracts may be awarded by June 15 for delivery of the first lots.

The vaccine, 900,000 doses of each of the 3 types, must be mono-valent and be manufactured, tested, and furnished in accordance with Regulatory Standards of the Public Health Service contained in the Federal Register.

The delivery schedule spans July 1 to September 1 as shown in the table below.

<u>Delivery</u> <u>Dates</u>	<u>I</u>	<u>Oral Poliovaccine</u> <u>II</u>	<u>III</u>
July 1	300,000 doses	300,000 doses	300,000 doses
Aug. 1	"	"	"
Sept. 1	"	"	"

Prospective manufacturers may bid on any one or combination of items, or on the entire contract of 2,700,000 doses.

Specifications require that vaccine be stored frozen and packaged in either concentrated or dilute form. A dropper-dispenser is to accompany each vial to permit accurate and rapid delivery in epidemic situations. Vaccine is to be kept ready by successful bidders and prepared and shipped swiftly in requested quantities to epidemic areas as the need arises. Criteria and procedures for use of this epidemic reserve are being prepared.

6. ENTEROVIRUS SURVEILLANCE

Following the Recommendations of the Surgeon General's Committee on Poliomyelitis Control in January, 1961, the Poliomyelitis Surveillance Program was expanded to include current information concerning isolations of all types of enteroviruses. In a pilot project all State laboratory directors were requested to report recent isolations. These have been summarized from time to time in the Morbidity and Mortality Weekly Reports.

The results of this pilot project were presented to the meeting of the Joint Liaison Committee of State Laboratory Directors and State Epidemiologists on May 7, and to the Biennial Conference of State and Territorial Epidemiologists on May 8-12, in Atlanta. There was unanimous agreement that this additional procedure was of real value and should be continued with modifications in the reporting mechanism.

The results to date are presented in the following tabular summary:

Reports on Isolations from State Laboratories
on 1961 Specimens Received to Date

State	Poliovirus			ECHO**	Cox-** sackie	Other and Unsp.	Total	Reported by
	I	II	III					
Florida	1	-	3	-	-	-	4	Dr. N. Schneider
Hawaii	3	-	-	-	-	2	5	Dr. K. Wilcox
Idaho	4*	-	1	-	-	-	5	Dr. A. Klotz
Illinois	1	-	-	-	-	-	1	Dr. A. Shaughnessy
Maryland	-	-	-	2	1	2	5	Dr. C. Perry
Massachusetts	1	-	-	-	-	4	5	Dr. R. MacGready
Minnesota	1	-	2	2	-	-	5	Dr. H. Bauer
Missouri	1	-	-	-	-	-	1	Dr. I. Adams
New Jersey	1	-	-	-	-	-	1	Dr. M. Goldfield
North Carolina	1	-	-	-	-	-	1	Dr. L. Maddry
Ohio	1	-	-	-	-	-	1	Dr. L. Ey
Pennsylvania	-	-	-	-	1	-	1	Dr. K. Hummeler
Texas	-	-	2	-	-	-	2	Dr. G. Irons
Washington	-	-	2	-	-	-	2	Dr. W. Giedt
Wisconsin	-	-	-	1	1	-	2	Dr. A. Evans
TOTAL	15	0	10	5	3	8	41	

* One family involved with one clinical case.

** Specific types of nonpolio enterovirus isolations include two ECHO 11 in Maryland and one in Wisconsin, ECHO 1 and 14 in Minnesota, Coxsackie B-3 in Maryland and in Pennsylvania, and Coxsackie B-unspecified in Wisconsin.

So far little evidence of localization or concentration of any type specific enterovirus has become apparent. Type I poliovirus has occurred sporadically in a number of States. Type III has occurred in Florida, Idaho, Minnesota, Texas, and Washington. The non-polio enteroviruses have so far been few in number and widely scattered.

Three main values of enterovirus surveillance are visualized:

- 1) Early warning of epidemics;
- 2) Prompt delimitations of epidemic areas;
- 3) Recognition of presence and extent of spread of ECHO and Coxsackie viruses in specific communities and wide areas.

The extent to which winter and early spring poliovirus isolations in a given area may serve as an Early-Warning-System is not known, but such associations have been observed on a number of occasions. The most notable one of recent years was the Des Moines, Iowa, epidemic of 1959 when poliovirus type I was isolated from 3 cases of aseptic meningitis in March more than 2 months prior to the onset of that severe epidemic. Furthermore the first cases of paralytic polio or aseptic meningitis to occur in any community should be subjected to virus diagnostic study so that preparations can be made promptly in the event that subsequent cases reveal an impending epidemic.

Such information will be essential to the most effective use of the oral poliovaccine in epidemic control.

Many sizable polio epidemics extend beyond county and even State borders. For example in 1960 an epidemic of type I polio involved a tri-county area in North and South Carolina, and an epidemic of type III polio involved several counties in western Maryland and Pennsylvania. Thus the occurrence of type-specific poliovirus infection in one area should alert all surrounding areas encompassing several States to the possibility that the same infection may spread to them.

Similarly the ECHO and Coxsackie viruses have accounted for numerous localized and sometimes extensive epidemics of polio-like disease. Particularly in 1957 Coxsackie B-5 and ECHO 9 were essentially nation-wide in extent. Many of these cases were confused with poliomyelitis, and the true nature of the problem was not appreciated for many months. The enterovirus surveillance system will avoid such confusion in the future. Furthermore, prompt knowledge of the occurrence of specific enteroviruses anywhere in the area will greatly facilitate laboratory directors in their screening and typing procedures for current isolations.

Therefore it is proposed that enterovirus surveillance become a permanent part of the Poliomyelitis Surveillance Program. All States are urged to continue to report as promptly as possible isolations of enteroviruses within their jurisdictions. Each State will work out its own most suitable arrangements. Ideally laboratory data should be submitted to the State epidemiologist for consolidation with clinical and epidemiological information before transmittal. The reports should be sent to the Poliomyelitis Surveillance Unit, Communicable Disease Center, Atlanta 22, Georgia.

In addition reports of enterovirus isolations are solicited from clinics, medical centers, and research institutes anywhere in the country. These will be summarized in the PSU Reports with due acknowledgment. The proper channel for the submission of such reports is through the local and State health officers.

7. SUPPLEMENTAL NOTE ON ENTEROVIRUS SURVEILLANCE

Dr. Henry M. Gelfand, Chief, Enterovirus Unit, Laboratory Branch, CDC has submitted the following progress report of an oral poliovaccine project.

"As part of a pilot study of oral poliovirus vaccine being conducted in collaboration with the Fulton County Health Department (Atlanta), Georgia (See PSU Report No. 223), pre-vaccination fecal specimens on rectal swabs were collected during the week of May 1st to 5th from approximately 450 children aged between 1 and 3 years.

"Of these, preliminary results are available from 104 specimens from a Negro housing project. Enterovirus isolates were obtained from 28 specimens, and 16 of 18 now identified as poliovirus type III, indicating an over-all type III infection rate of 24 percent."

(This report was prepared by the Poliomyelitis and Polio-like Disease Surveillance Unit, Michael J. Regan, M. D., Assistant Chief, and Mr. Leo Morris, Statistician, with the assistance of Statistics Section, CDC).

Figure 1. CURRENT U.S. POLIO INCIDENCE
 compared with years 1956 through 1960

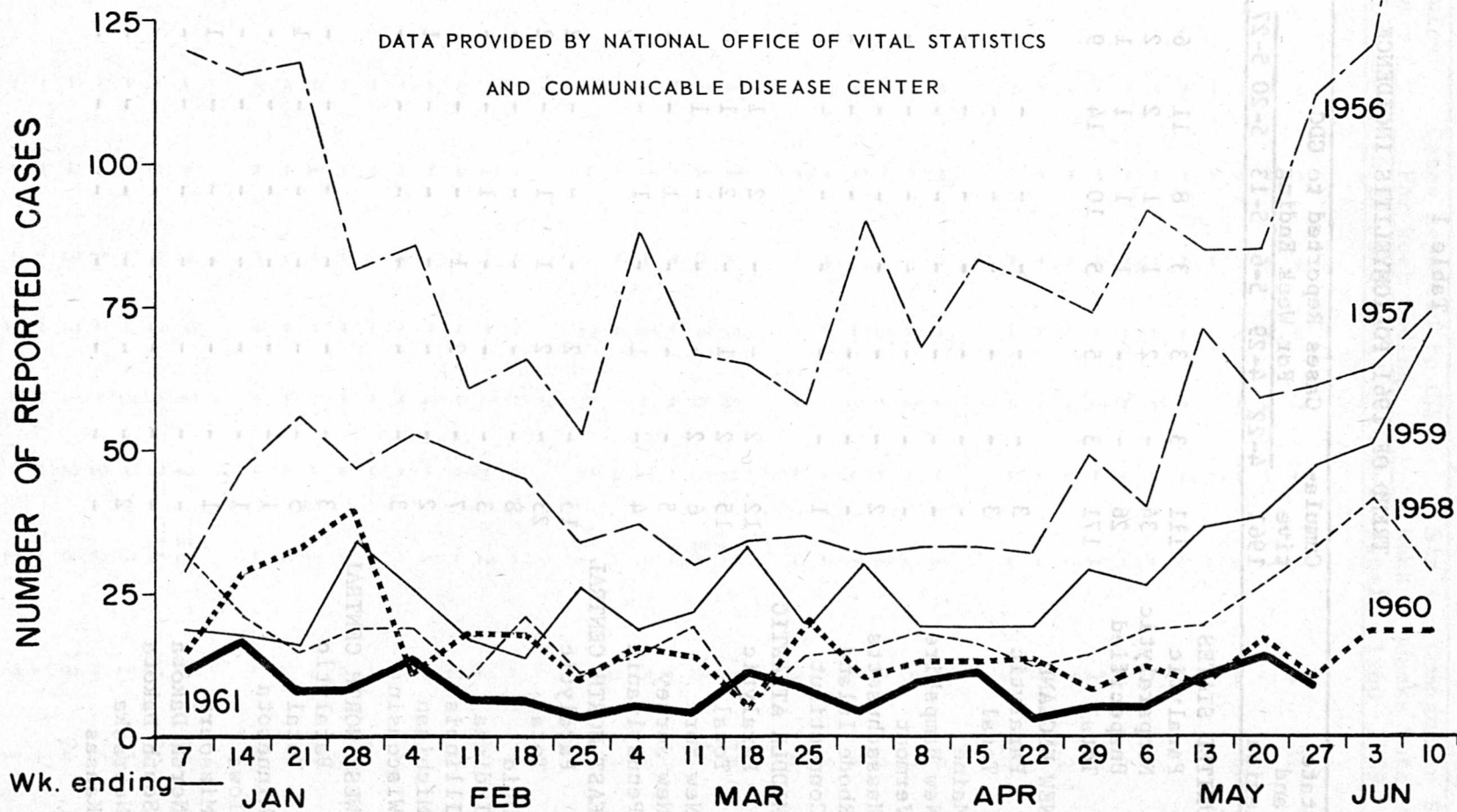


Table 1 (Continued)

State and Region	Cumulative 1961	Cases Reported to CDC For Week Ending						Six Week Total	Comparable Six Weeks Totals in		
		4-22	4-29	5-6	5-13	5-20	5-27		1960	1959	1958
SOUTH ATLANTIC											
Paralytic	10	-	-	-	-	1	-	1	4	31	6
Total	14	-	-	-	-	1	-	1	7	42	17
Delaware	2	-	-	-	-	-	-	-	-	-	-
Maryland	-	-	-	-	-	-	-	-	-	-	-
D. C.	-	-	-	-	-	-	-	-	-	-	1
Virginia	-	-	-	-	-	-	-	-	-	6	1
West Virginia	2	-	-	-	-	-	-	-	1	4	2
North Carolina	4	-	-	-	-	1	-	1	1	1	3
South Carolina	1	-	-	-	-	-	-	-	1	2	-
Georgia	2	-	-	-	-	-	-	-	1	1	-
Florida	3	-	-	-	-	-	-	-	3	28	10
EAST SOUTH CENTRAL											
Paralytic	4	-	-	-	-	1	-	1	4	7	7
Total	16	-	-	-	1	1	-	2	5	13	18
Kentucky	14	-	-	-	1	-	-	1	1	2	7
Tennessee	1	-	-	-	-	1	-	1	1	6	5
Alabama	-	-	-	-	-	-	-	-	-	1	1
Mississippi	1	-	-	-	-	-	-	-	3	4	5
WEST SOUTH CENTRAL											
Paralytic	17	1	1	-	3	4	2	11	10	30	23
Total	29	1	1	-	3	6	3	14	16	46	33
Arkansas	1	-	-	-	-	-	-	-	-	5	2
Louisiana	7	-	1	-	1	-	1	3	5	5	-
Oklahoma	-	-	-	-	-	-	-	-	2	3	1
Texas	21	1	-	-	2	6	2	11	9	33	30
MOUNTAIN											
Paralytic	10	-	-	-	-	-	-	-	-	8	4
Total	18	-	1	-	-	1	-	2	2	10	13
Montana	1	-	-	-	-	-	-	-	2	1	2
Idaho	4	-	-	-	-	1	-	1	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-
Colorado	3	-	-	-	-	-	-	-	-	-	2
New Mexico	1	-	-	-	-	-	-	-	-	2	-
Arizona	3	-	1	-	-	-	-	1	-	7	6
Utah	6	-	-	-	-	-	-	-	-	-	2
Nevada	-	-	-	-	-	-	-	-	-	-	1
PACIFIC											
Paralytic	37	-	-	3	3	4	2	12	21	28	14
Total	48	-	-	4	3	4	3	14	23	32	24
Washington	6	-	-	-	-	3	-	3	1	1	2
Oregon	4	-	-	1	-	-	1	2	-	6	-
California	36	-	-	3	2	1	2	8	19	24	15
Alaska	-	-	-	-	-	-	-	-	1	-	1
Hawaii	2	-	-	-	1	-	-	1	2	1	6
TERRITORY											
Puerto Rico	4	-	1	-	-	-	1	2	83	-	14

Table II

THE NATIONAL FOUNDATIONMONTHLY REPORT OF POLIOMYELITIS VACCINE RELEASED AND SHIPPED
(1,000cc's)FEBRUARY 1961

	<u>SINGLE ANTIGEN</u>		<u>MULTIPLE ANTIGEN</u>		<u>TOTAL</u>	
	<u>This Month</u>	<u>To Date</u>	<u>This Month</u>	<u>To Date</u>	<u>This Month</u>	<u>To Date</u>
CC. Released	6,793	473,876	204	14,278	6,997	488,154
CC. Shipped						
National Foundation	-	15,245	-	-	-	15,245
Public Agencies	1,232	165,644	53	924	1,285	166,568
Commercial Channels	<u>1,104</u>	<u>166,820</u>	<u>463</u>	<u>11,595</u>	<u>1,567</u>	<u>178,415</u>
Domestic Total	<u>2,336</u>	<u>347,709</u>	<u>516</u>	<u>12,519</u>	<u>2,852</u>	<u>360,228</u>
Export	3,159	100,171	20	526	3,179	100,697

MARCH 1961

	<u>SINGLE ANTIGEN</u>		<u>MULTIPLE ANTIGEN</u>		<u>TOTAL</u>	
	<u>This Month</u>	<u>To Date</u>	<u>This Month</u>	<u>To Date</u>	<u>This Month</u>	<u>To Date</u>
CC. Released	3,737	478,065*	721	14,999	4,458	493,064*
CC. Shipped						
National Foundation	2	15,247	-	-	2	15,247
Public Agencies	2,374	168,018	102	1,026	2,476	169,044
Commercial Channels	<u>2,075</u>	<u>168,895</u>	<u>509</u>	<u>12,104</u>	<u>2,584</u>	<u>180,999</u>
Domestic Total	<u>4,451</u>	<u>352,160</u>	<u>611</u>	<u>13,130</u>	<u>5,062</u>	<u>365,290</u>
Export	2,116	102,287	25	552	2,141	102,839

* Includes February 1961 release of 451,845 cc. not previously reported.