POLIOMYELITIS SURVEILLANCE REPORT

NO. 117 THIRD YEAR JULY 12, 1957

U.S. Department of Health, Education and Welfare
Public Health Service Bureau of State Services
Communicable Disease Center
Poliomyelitis Surveillance Unit
50 Seventh Street, N.E.
Atlanta, Georgia

SPECIAL NOTE

The information in this report represents a factual summary of preliminary data reported to the Poliomyelitis Surveillance Unit from State Health Departments, Epidemic Intelligence Service Officers, participating laboratories and other pertinent sources. It is understood that the contents of these reports will not be released to the press, except by the Office of the Surgeon General, Public Health Service, U. S. Department of Health, Education and Welfare. State Health Officers, of course, are free to release any information they may wish concerning data from their state.

Table of Contents

I. Current Poliomyelitis Morbidity Trends

Total national poliomyelitis incidence has remained low with a total of 154 cases, including 42 paralytic, reported to the National Office of Vital Statistics for the week ending July 6. This is an increase of 12 cases over the 142 cases reported for the week of June 29. Figure 1 presents the national incidence by weeks for April to July of the years 1952 through 1957. For the 27th week, 275 cases were reported in 1956 and 406 in 1955; in 1947 94 cases were reported for this week.

Through the 27th week a cumulative total of 1563 cases has been reported in 1957; this may be compared with 2942 through the comparable week in 1956 and 4128 in 1955. In 1947, however, only 1291 cases had been reported for the comparable period.

Incidence by states and regions for the past six weeks is presented in Table 1, with six-week totals for the comparable period of the past four years. An increase in incidence was reported in the North Central Region, reflecting a general increase rather than concentration in one area. It is of interest that in the 12 North Central States only 2 of the total of 25 cases were reported as paralytic.

II. Report from Tennessee

On July 3, 1957, Dr. Cecil B. Tucker, Director, Division of Preventable Diseases, Tennessee State Health Department, and Dr. Lauri D. Thrupp, Poliomyelitis Surveillance Unit, visited Johnson City, a town of some 30,000 in Northeastern Tennessee, which had reported an outbreak of non-paralytic disease resembling poliomyelitis.

Through July 4, a total of 26 patients had been seen at Memorial Hospital with an acute febrile illness characterized chiefly by headache and vomiting. Additional symptoms of lesser severity included stiff neck and/or back, pain in neck and/or back, muscle pain, orbital or retro-orbital pain, and abdominal pain. A few patients experienced diarrhea, and a mild sore throat was noted in a small number of cases. There were no complaints of pleuritic or chest pain. Onset of illness was usually rapid, although 6 of the 26 patients experienced a more gradual progression of symptoms suggestive of a "biphasic" course.

Definite meningeal signs of mild to marked degree were present in all cases. In many cases muscle spasm and tenderness was noted in the back, legs, and shoulders, as well as the neck. No other neurological abnormalities were present. Fever on hospital admission was between 100.5° and 104° (rectal). Mild to moderate pharyngeal injecton was frequently present; no instances of herpangina had been noted.

Lumbar puncture often gave almost immediate relief from headache and vomiting. In 24 of the 26 cases, CSF pleocytosis was present, with a white cell count ranging from 15 to 402 per $mm.^3$ There was usually a predominance of polys, with a median differential of 80% polys.

The illness was usually of short duration, the patient becoming afebrile in two to three days and meningeal signs and muscle spasm rapidly subsiding. Examination of all cases by a Registered Physical Therapist and an Orthopedic Surgeon revealed no paralysis.

The age distribution of these initial 26 cases is shown in the table below; the largest concentration is seen in school age children. Interview of a family member in 19 of the 25 households affected revealed that similar but milder illnesses were being experienced by other members of the same households and in the neighborhoods. The table below also shows the age distribution of household contacts, according to whether or not the household member was ill. It may be noted that illness in household contacts was also most frequent in children of grade-school and pre-school age.

Age Distribution of Cases and of Household Contacts with and Without Illness

Age (years)	0-1	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-20	21-30	31+	Total
Index Cases	-	-	2	4	7	3	1	4	1	3	1	26
Household Contacts Ill	1	3	4	5	-	2	-	1	1	1	1	19
Household Contacts Not Ill	3	3	1	2	4	4	5	2	10	4	29	67

The accompanying figure shows the dates of onset of first symptoms in the first 26 cases and in household contacts with a history of preceding or concurrent illness. Of the first 11 cases, with onset between June 22 and June 26, 8 were from the South West section of the City, a lower socio-economic section.

Of the 26 cases, 14 had not received poliomyelitis vaccine, 4 had been given two shots, and 7 had completed their three shots. (Vaccination history had not been determined for the one remaining case). Polio vaccination in household contacts likewise appeared to have no effect on the incidence of illness.

The rapid onset of illness, the prominence of headache and vomiting with muscle spasm much less striking, the absence of any paralysis, the short duration of illness and the apparent high community attack rate indicate this outbreak of aseptic meningitis to be similar to previously described epidemics caused by Coxsackie or ECHO viruses rather than by poliovirus.

* * * *

Dr. Tucker has reported that the outbreak is continuing, with a total of 44 cases reported through July 10. Transient paresis has been found in two cases only; recovery is apparently complete.

(Continued on Page 4)

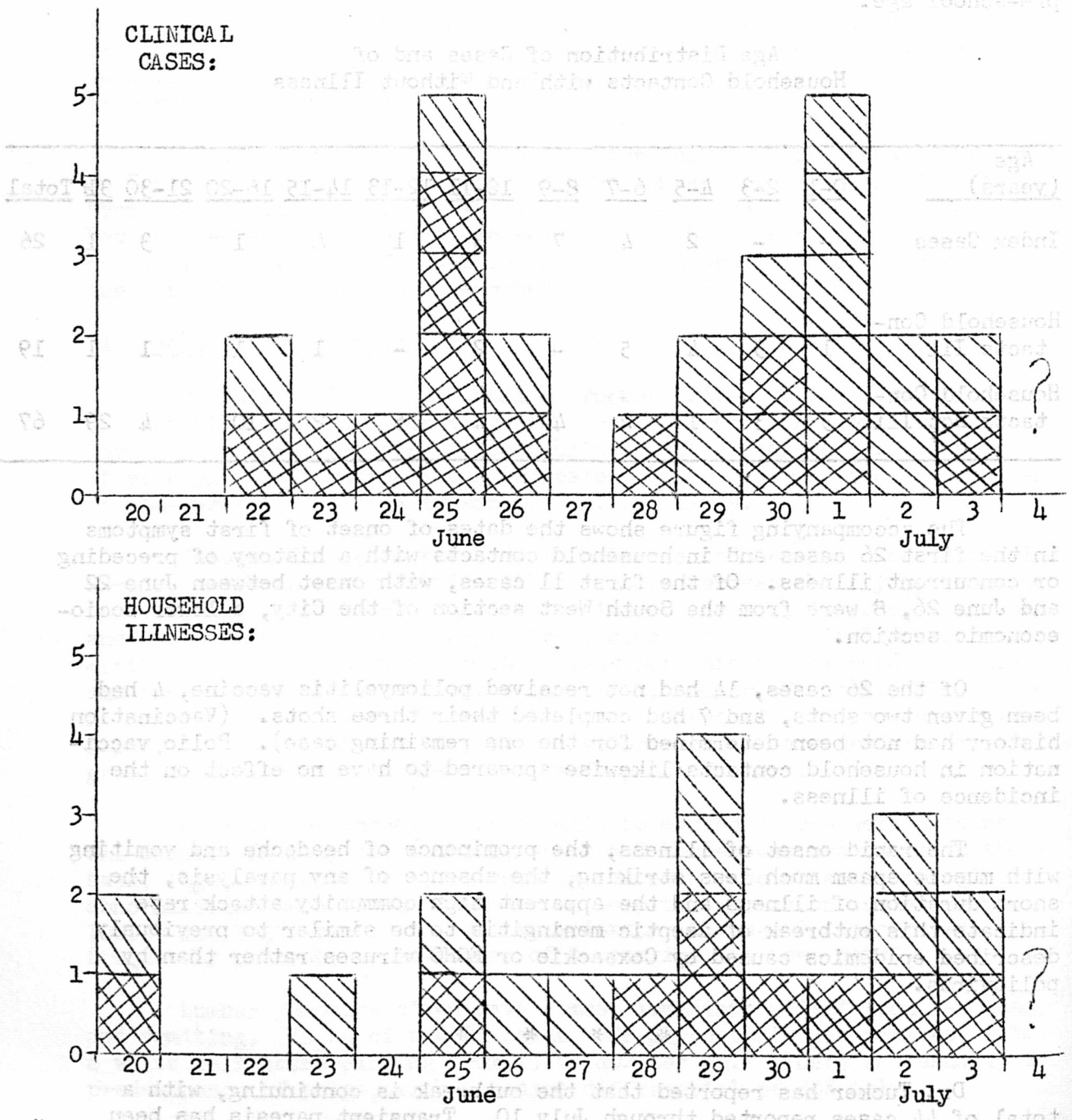
Aseptic Meningitis Syndrome Cases* and Illnesses in Household Members**
Johnson City, Tennessee

by

DATE OF ONSET

South West Section of Johnson City

Rest of Johnson City and Surrounding Area



* Cases seen by attending physicians, Johnson City Memorial Hospital, through July 4, 1957.

** Any concurrent illness in a household contact of the 26 clinical cases: Data from interview of a family member in 19 households in which 20 cases occurred. Household data not yet available for the remaining 6 cases.

Preliminary data reported by Mr. J.H. Barrick of the Tennessee State Health Department Laboratory indicate that a viral agent cytopathic for Hela cells (4 to 5 days after inoculation) has been isolated from seven of the first 12 stool specimens studied. The agent was not pathogenic for suckling mice and appears not to be neutralized by specific polio antisera. It would therefore appear to belong to the ECHO group. Specimens will be further studied by the Virus and Rickettsia Laboratories of the Communicable Disease Center in consultation with the Tennessee State Health Department Laboratory.

III. Report from California

The California State Department of Public Health Poliomyelitis Report No. 2, June 27, 1957, contains a summary of data on poliomyelitis incidence in California for the disease year April 1 to June 22. This Release notes that:

> Reported polio incidence in California this year continues to remain unusually low... A total of 139 cases has been reported for the current disease year compared with 291 last year, 316 in 1955, and a median of 275 for the 5 "pre-vaccine" years 1950-1954. Paralytic incidence this year is also remaining at a ten-year low. Fifty-one cases, 37% of the total, have been reported as paralytic this year compared with 71% last year, and a 5-year median of 55%, 1950-54...

The data on age distribution and vaccination status in the following table are taken from this same report for disease year April 1 - June 22,1957.

Age	Total Cases	Vaccinated			Non-vaccinated		
		Total	Paral.	%Paral.	Total	Paral.	%Paral.
0-4	30	6	1		24	17	
5-19	47	23	6		24	7	
20/	62	15	5		47	15	
All Ages	139	44	12	27	95	39	41

This table shows that among vaccinated cases 27% were paralytic, while among unvaccinated cases 41% were paralytic. The California Surveillance Report notes the low proportion of paralytic disease occurring among both vaccinated and unvaccinated persons, suggesting that other virus infections may be responsible for some of the cases which have been diagnosed as polio.

IV. Routine Poliomyelitis Surveillance

During the week ending July 11, the Polio Surveillance Unit received reports of eight poliomyelitis cases occurring within 30 days of a polio vaccine inoculation. Of these eight cases, four were paralytic and four were non-paralytic; the paralytic cases are listed in Table 3. The four paralytic cases and three of the non-paralytic cases were reported from Texas; one non-paralytic case was reported from Nebraska.

Of the paralytic cases reported from Texas, one was in a five year-old male with onset of paralysis (site not reported) five days following first inoculation with Lilly vaccine (#683458). This one million cc lot was distributed to 37 states during January and February, 1957. One other paralytic case has been reported in association with this lot occurring in a five months old female with onset of left leg paralysis 23 days after first inoculation in the left leg.

For two of the three remaining paralytic cases, the vaccine manufacturer, lot number and site of first paralysis are unknown. The third paralytic case had onset of symptoms one day following first inoculation with an unknown lot of Lilly vaccine; the site of inoculation and site of first paralysis were not reported.

V. Vaccine Distribution

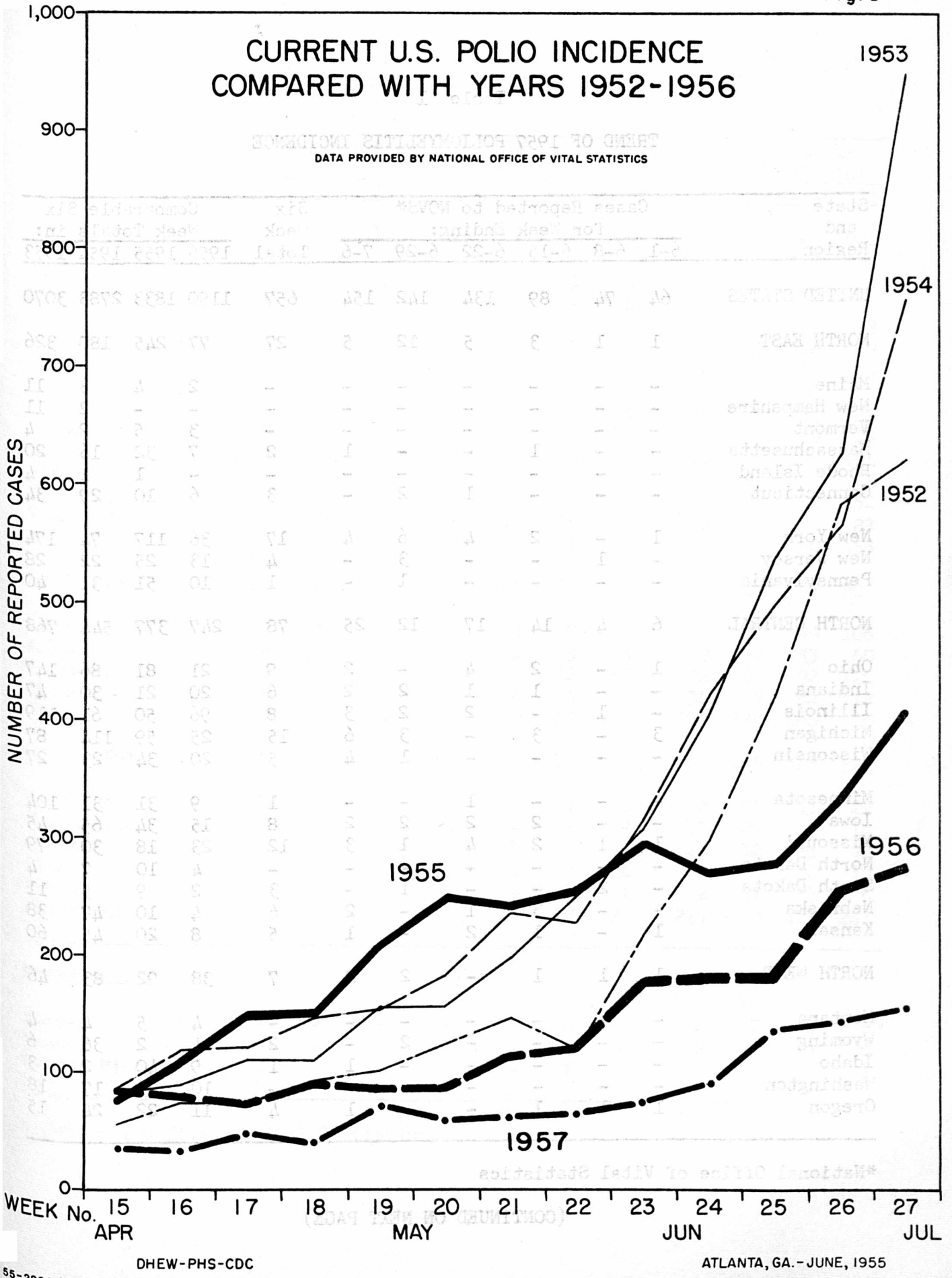
Table 2 presents a summary of current and cumulative shipments of vaccine (in 1000's of cc's of net bottled vaccine). Excluding export, 4.2 million cc's were shipped June 1-28.

The Vaccine Inventory on June 28, 1957, totaled 10.3 million cc's including vaccine unshipped by manufacturers and vaccine on hand in State and Local Health Departments, Physicians' Offices and in Commercial Channels.

(This Report was prepared by Dr. Lauri David Thrupp and Miss Helen Forester, with assistance from the Statistics Section, CDC.)

LDT
(700)

Fig. 1



DHEW-PHS-CDC

ATLANTA, GA.-JUNE, 1955

55-2202 (2)

Table 1

TREND OF 1957 POLIOMYELITIS INCIDENCE

State and Region	Cases Reported to NOVS* for Week Ending: 6-1	6-8	6-15	6-22	6-29	7-6	Six Week Total	Comparable Six Week Totals in: 1956	1955	1954	1953
UNITED STATES	64	74	89	134	142	154	657	1190	1833	2783	3070
NORTH EAST	1	1	3	5	12	5	27	77	245	180	326
Maine	-	-	-	-	-	-	-	2	4	3	11
New Hampshire	-	-	-	-	-	-	-	-	-	2	11
Vermont	-	-	-	-	-	-	-	3	5	2	4
Massachusetts	-	-	1	-	-	1	2	7	32	16	20
Rhode Island	-	-	-	-	-	-	-	-	1	1	4
Connecticut	-	-	-	1	2	-	3	6	10	29	34
New York	1	-	2	4	6	4	17	36	117	74	174
New Jersey	-	1	-	-	3	-	4	13	25	22	28
Pennsylvania	-	-	-	-	1	-	1	10	51	31	40
NORTH CENTRAL	6	4	14	17	12	25	78	247	377	544	768
Ohio	1	-	2	4	-	2	9	21	81	86	147
Indiana	-	-	1	1	2	2	6	20	21	30	47
Illinois	-	1	-	2	2	3	8	96	50	61	119
Michigan	3	-	3	-	3	6	15	25	59	114	87
Wisconsin	-	-	-	-	1	4	5	20	34	23	27
Minnesota	-	-	-	1	-	-	1	9	31	31	104
Iowa	-	-	2	2	2	2	8	15	34	65	45
Missouri	1	1	2	4	1	3	12	23	18	30	79
North Dakota	-	-	-	-	-	-	-	4	10	7	4
South Dakota	-	2	-	-	1	-	3	2	9	5	11
Nebraska	-	-	3	1	-	2	6	4	10	47	38
Kansas	1	-	1	2	-	1	5	8	20	45	60
NORTH WEST	1	1	1	-	2	2	7	38	92	83	46
Montana	-	-	-	-	-	-	-	4	5	4	4
Wyoming	-	-	-	-	2	-	2	4	2	36	6
Idaho	-	-	-	-	-	1	1	9	40	2	3
Washington	-	-	-	-	-	-	-	10	23	17	18
Oregon	1	1	1	-	-	1	4	11	22	24	15

*National Office of Vital Statistics

(CONTINUED ON NEXT PAGE)

Table 1 (Continued)

State and Region	Cases Reported to NOVS* for Week Ending: 6-1	6-8	6-15	6-22	6-29	7-6	Six Week Total	Comparable Six Week Totals in: 1956	1955	1954	1953
SOUTH EAST	5	16	17	34	36	37	145	167	341	571	801
Delaware	-	-	-	-	-	1	1	2	10	2	3
Maryland	-	-	-	4	-	-	4	10	24	5	17
D. C.	-	-	-	-	-	-	-	1	4	1	8
Virginia	2	1	-	3	-	2	8	17	30	28	69
West Virginia	-	1	1	-	1	-	3	4	10	14	39
North Carolina	-	2	2	4	1	6	15	18	27	39	183
South Carolina	2	3	5	10	7	5	32	14	33	49	25
Georgia	-	-	3	2	3	3	11	11	26	99	101
Florida	-	6	2	1	5	-	14	60	80	205	68
Kentucky	1	-	3	1	-	-	5	19	28	32	52
Tennessee	-	1	1	9	16	19	46	6	27	37	83
Alabama	-	2	-	-	3	1	6	5	42	60	153
SOUTH CENTRAL	42	32	39	55	64	67	299	396	489	892	808
Mississippi	3	3	1	12	3	2	24	31	38	99	106
Arkansas	2	-	-	6	4	3	15	9	27	53	60
Louisiana	4	5	6	4	12	12	43	92	67	92	124
Oklahoma	1	4	2	5	6	5	23	34	27	82	118
Texas	32	20	30	28	39	45	194	230	330	566	400
SOUTH WEST	9	20	15	23	16	18	101	265	289	513	321
Colorado	1	2	-	-	-	1	4	12	21	33	22
New Mexico	-	2	1	4	-	1	8	11	23	8	16
Arizona	2	1	-	-	1	-	4	15	12	33	26
Utah	-	-	1	-	1	2	4	6	6	12	10
Nevada	-	-	-	-	-	1	1	2	27	14	6
California	6	15	13	19	14	13	80	219	200	413	241
TERRITORIES											
Alaska	-	-	-	-	-	-	-	2	2	21	9
Hawaii	-	-	-	-	-	-	-	2	11	49	8
Puerto Rico	-	1	-	-	-	1	2	13	35	-	4

* National Office of Vital Statistics.

Table 2

Poliomyelitis Vaccine Shipment Summary

(Reports from Polio Vaccine Activity, BSS, USPHS, through 7-5-57)

Vaccine Shipments (in 1000's of cc's)

Period	NFIP*** Sponsored Clinics	Public Agencies	Commercial Channels	Export ****	Total*
1955	13,541	7,893	6,233**	-	27,667
1956	194	45,588	24,784	6,477	77,043
1957					
January	2	4,075	4,243	2,111	11,061
February	3	9,934	6,100	544	16,581
March	3	5,297	3,140	1,456	9,896
April	-	8,639	5,161	1,360	15,161
May	73	5,365	3,767	536	9,740
June 1-28	70	2,734	1,349	378	4,531
Cumulative Totals	13,886	90,156	54,776	12,863	171,681

Vaccine Inventory (in 1000's of cc's)

Week Ending 6/28/57

Vaccine Cleared for distribution by the National Institutes of Health but not shipped	5,043
Vaccine in State and Local Health Departments	3,030
Vaccine in Commercial Channels and Physicians Offices	2,210

* Totals do not add because figures are rounded to nearest 1000 cc's.

** Includes 562,740 cc's shipped through commercial channels prior to inauguration of the Interstate Distribution Program in August, 1955.

*** Vaccine purchased by the National Foundation for Infantile Paralysis and distributed for inoculation of first and second grade children in locally organized school clinics.

**** Regulated under Department of Commerce Export Policy.

Table 3

PARALYTIC POLIOMYELITIS OCCURRING WITHIN 30 DAYS OF LAST VACCINE INOCULATION

Cases Reported to PSU July 4 through July 11, 1957

PSU Case No.	County	Initials	Age	Sex	Date Inoc.	Date 1st Symp.	Date 1st Para.	Site Inoc.	Site 1st Para.	Mfr.	Lot No.	Remarks
Tex-156	Hidalgo	DR	5	M	3-8-57	3-17	?	LA	?	L	683458	
Tex-157	Mitchell	H	6	M	1-29-57	1-30	?	?	?	L	?	
Tex-158	Tarrant	DW	3	F	? 5-16-57	5-21	?	? Arm	?	? ?	? ?	
Tex-159	Tarrant	MU	1	F	4-17-57	5-9	?	Leg	?	?	?	