

CDC POLIOMYELITIS SURVEILLANCE REPORT

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U.S. Department of Health, Education and Welfare
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COMMUNICABLE DISEASE CENTER

Poliomyelitis Surveillance Unit

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SPECIAL NOTE

Information presented in this report represents a factual summary of preliminary data regarding poliomyelitis and polio-like diseases reported to CDC from State Health Departments, participating diagnostic and reference laboratories, Epidemic Intelligence Service Officers, National Office of Vital Statistics, and other pertinent sources. It is to be emphasized that these reports contain provisional data intended for the information and administrative use of physicians involved in investigation and control of poliomyelitis and polio-like diseases. Anyone desiring to quote this information is urged to contact the person or persons responsible for the items reported in order that the exact interpretation of the report and the current status of the investigation be obtained.

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SUMMARY

1. Total reported poliomyelitis incidence decreased for the second consecutive week with 244 cases recorded, compared with 276 the previous week. The number of cases reported as paralytic remained stable, with 73 reported last week and 77 the preceding week.

2. In Washington, D.C. the cumulative total of 39 reported poliomyelitis cases comprises predominantly paralytic disease in Negro pre-school age children. Over 30 additional non-paralytic aseptic meningitides hospitalized in the metropolitan area have not been reported as polio.

3. Two local outbreaks of aseptic meningitis have been reported in Connecticut, one associated with Coxsackie B5 and the other with ECHO-9 and Coxsackie A-9. Another small group of cases in Kansas has yielded viruses serologically related to ECHO-9 which are also pathogenic to suckling mice.

I. POLIOMYELITISA. Current Poliomyelitis Morbidity Trends

Recorded national incidence of poliomyelitis decreased for the second consecutive week. The National Office of Vital Statistics received reports of 244 cases for the week ending September 7, following 276 and 397 for the two preceding weeks. Figure 1 presents the national poliomyelitis incidence by weeks for the years 1947 and 1952-1957. It was pointed out in PSU Report No. 125 that a temporary decrease in incidence was also recorded at this time of the year in seven of the past 12 years.

The total number of cases for the 36th week of this year and the cumulative total for the 1957 calendar year may be compared with similar data for last year and the low years 1942 and 1947, as shown below. It is of interest that 1957 weekly incidence has fallen below 1942 incidence for the first time; the total of 267 for the 36th week represented the peak incidence during 1942. Cumulative records, however, are much greater this year than in 1942.

TOTAL NATIONAL REPORTED POLIO INCIDENCE

	<u>1957</u>	<u>1956</u>	<u>1947</u>	<u>1942</u>
36th Week	244	855	825	267
Cumulative Total Through 36th Week	4,155	9,795	4,610	2,166
Total for the Whole Year	-	15,463	10,789	4,190

Paralytic polio incidence remained stable at 73 cases for the 36th week compared with 77 for the 35th week. The proportion of total cases reported as paralytic increased slightly over the previous week. Table 1 presents the reported incidence for the past six weeks by state and region, and of paralytic cases by region, with six-week totals for the comparable periods of the previous four years.

B. Poliomyelitis in Washington, D.C. - Progress Report

Seven paralytic cases were recorded during the past week from the District of Columbia, bringing to 39 the 1957 total of hospitalized cases reported as poliomyelitis. Of these 39 cases, preliminary reports indicate 35 to be paralytic and 4 non-paralytic. The remarkable age and race distribution of cases this year in the District of Columbia remains; 34 of the 39 are under six years of age, and 35 are Negro. The large majority are unvaccinated, although one patient with paralytic disease had received three doses of vaccine. Twelve strains of Type III and one of Type I poliovirus have been isolated thus far from reported cases by Laboratories at the National Institutes of Health and Walter Reed Army Hospital.

In general, hospitals have reported only paralytic cases as poliomyelitis. At least 30 additional cases of non-paralytic aseptic meningitis have been hospitalized. From one of these, Type III poliovirus has been isolated, and in several others, strains of Group B Coxsackie virus have been found.

In July and early August, a geographic concentration of eleven cases developed in three small census tracts in the South West sector of the City. A later grouping of 10 cases has appeared in the North East section. The remaining 18 cases are geographically scattered.

It is of note that in 1954-55 in the same South West district of the city heavy infectious hepatitis incidence, along with diarrhea and typhoid fever, was investigated in relation to suspect defective sanitary and plumbing conditions. Person-to-person contact was established, however, as the likely mode of spread in most cases of the three diseases. (Levin, Gilbert V. and West, Howard; Infectious Hepatitis, Diarrhea and Typhoid Fever; Public Health Reports 7: p. 938, September 1956). It is probable that the majority of defective plumbing facilities detected during the 1955 survey have not been repaired since this section will eventually be reconstructed in urban redevelopment programs.

The District of Columbia Health Department and Dr. Howard Siedler, EIS Officer, have undertaken a household survey of two census tracts, both of lower socio-economic status and with predominant Negro populations. One is the Southwest district "high incidence" tract mentioned above, and the other, in the North Central area of the city, is a tract of similar size where only one polio case has been recorded (on September 6, after the survey had been initiated). From 50 households in each tract family histories have been obtained and rectal swabs and blood samples taken from children under 10 years of age. The survey specimens will be studied by the CDC Virus Diagnostic Laboratories under Dr. Seymour Kalter.

C. Routine Poliomyelitis Surveillance

1. Under-30-day vaccinated paralytic cases - Reports of three paralytic poliomyelitis cases occurring within 30 days of a polio vaccine inoculation were received by PSU during the week ending September 11. These paralytic cases are reviewed briefly below and in detail in Table 2.

a. Illinois reported a case (Ill-491) in four year-old female with onset of illness five days following second inoculation of vaccine (left arm, Lilly vaccine, Lot No. 697785, 800,000 cc's distributed in April). No other cases have been reported to PSU in association with this lot of vaccine. Dr. Norman Rose, Illinois Department of Public Health reports that first symptoms apparently were thought to represent systemic reaction to the vaccine, similar to a reaction experienced following the first inoculation. However, the child's condition deteriorated and she was comatose on hospital admission. Within two days symptoms lessened, with recovery from the encephalitic episode. The child is receiving physical therapy for residual paresis in the left ankle.

b. A report was received of a California case developing right leg paralysis 14 days following inoculation in the left arm with Parke, Davis vaccine, lot number 029892 (600,000 cc's distributed in July). No other cases have been reported to PSU in association with this lot of vaccine.

c. A triply-vaccinated paralytic poliomyelitis case was reported from Wisconsin. Onset of illness was 27 days following inoculation; site of inoculation, vaccine manufacturer and lot number were unknown.

2. Triply-vaccinated cases - During the week ending September 11, a total of five paralytic and eight nonparalytic triply-vaccinated poliomyelitis cases was reported to PSU. The paralytic triply-vaccinated cases are listed in Table 3. One of the paralytic cases, with onset of illness 27 days following inoculation, is also included in the under-30-day section of this report.

PSU has now received reports of 46 paralytic and 227 nonparalytic poliomyelitis cases occurring in triply-vaccinated individuals during 1957.

3. Vaccine distribution - A summary of current and cumulative data on vaccine releases, shipments and inventory appears in Table 4. Excluding export, over eight million cc's were shipped during August.

II. ASEPTIC MENINGITIS - Reports from States

1. Kansas - Dr. Charles A. Hunter, Director of Laboratories, Kansas State Board of Health, reports that in the state to date this year only one strain of poliovirus, Type III, has been isolated. Coxsackie A-9 and

Coxsackie B-5 have been isolated from two nonparalytic cases initially reported as poliomyelitis.

Additional viruses, cytopathogenic for human amnion cells and neutralized by ECHO 9 antiserum, have been isolated from five children in the Wichita - Winfield area. The children ranged from 4-12 years of age, and dates of onset were from July 9-25. Tissue culture fluids of these isolates produced tremor and paralysis in about six days in suckling mice. Most of the mice inoculated died but a few in each litter developed paralysis but were still alive after 14 days. Tissue culture fluid of one isolate was not pathogenic for suckling mice. Further studies are underway at the Kansas State Board of Health Laboratories.

2. Connecticut - Dr. James C. Hart, Director, Bureau of Preventable Diseases, Connecticut State Health Department, has compiled the formation concerning two outbreaks of aseptic meningitis in Connecticut.

a.) Essex - An outbreak of polio-like disease occurred in a boy's camp in Essex during the month of July. One hundred-twenty boys were present when camp opened July 1. During entrance physical examinations, one boy was found to have a temperature elevation with no other signs or symptoms, was admitted immediately to the infirmary and had no further contact with other boys until released several days later. On July 10, 1957 another boy from the camp unit to which the original patient had been discharged was admitted to the infirmary. Thereafter, one or two cases were admitted daily through July for a total of about 40 cases. Peak incidence occurred on July 26, 1957 when nine patients were admitted.

The symptoms in most cases were very similar. All had fever, up to 103°F, which in a few cases was the only finding. Most complained of headache, however, and some had nausea and vomiting. A few had slight sore throats, mild abdominal pain, and transient stiffness of the neck. Physical findings were limited to temperature elevation, slight redness of the throat, and slight stiffness of the neck.

Laboratory examinations on five patients at the Connecticut State Health Department Laboratory were negative for adenovirus and poliovirus. Two paired bloods were negative for influenza. Coxsackie B-5 was isolated from stools of these same two patients.

b.) Bristol - An outbreak of polio-like disease is under study in Bristol by the Yale University Section of Preventive Medicine. In the period from July 28 - August 30, 1957, illness appeared in 15 individuals from eight families. Four clinical types of disease were manifest; aseptic meningitis with rash, aseptic meningitis without rash, rash with fever and headache, and rash with fever, vomiting, and mild diarrhea.

Six cases of aseptic meningitis with rash yielded an ECHO 9 virus from stool specimens, and a case of aseptic meningitis without rash yielded an ECHO 9 virus from stool and throat washings. Three Coxsackie A-9 virus strains were isolated from a family with the clinical picture

of rash, fever, vomiting, and diarrhea. Viruses as yet unidentified have been isolated from other individuals whose clinical picture is mainly that of fever, rash, and headache. Investigation of this outbreak by the Yale group is continuing.

It is of interest that concurrently with the Bristol outbreak, three other strains of ECHO 9 virus have been isolated from spinal fluid and stools from cases of aseptic meningitis in Hartford, Danielson, and Willimantic, Connecticut.

S. O. Coakley, M.D., Director, Connecticut State Health Department, Hartford, Connecticut, reports that the following outbreak of aseptic meningitis occurred in the town of Bristol, Connecticut, during the month of July, 1959.

(a) History - An outbreak of aseptic meningitis occurred in the town of Bristol, Connecticut, during the month of July, 1959. The outbreak began on July 10, 1959, when a 10-year-old boy was found to have a fever, headache, and vomiting. He was hospitalized and died on July 12, 1959. Other cases of aseptic meningitis were reported on July 13, 1959. Another boy from the same family, who had the same illness, was hospitalized on July 14, 1959. The outbreak continued until July 15, 1959, when the last case was reported. The outbreak was limited to the town of Bristol, Connecticut, and did not spread to other parts of the state.

The symptoms in most cases were fever, headache, and vomiting. In a few cases, there was also diarrhea. The illness was self-limiting and usually lasted for 3 to 5 days. The patients were hospitalized and treated with fluids and analgesics. The outbreak was limited to the town of Bristol, Connecticut, and did not spread to other parts of the state.

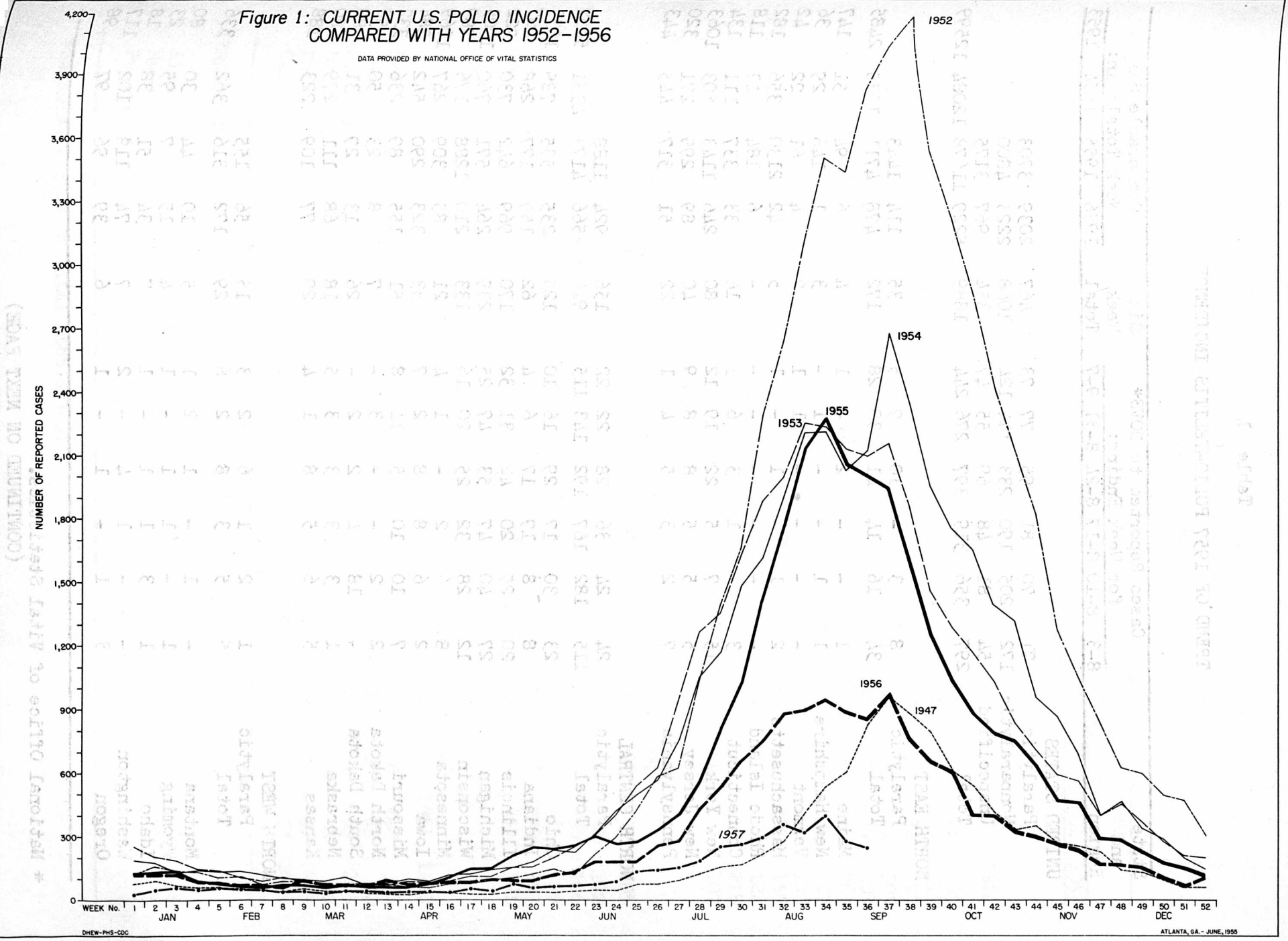
Investigation of the outbreak of aseptic meningitis in the town of Bristol, Connecticut, during the month of July, 1959, was conducted by the Yale University School of Medicine. The investigation was limited to the town of Bristol, Connecticut, and did not spread to other parts of the state.

(b) Bristol - An outbreak of aseptic meningitis occurred in the town of Bristol, Connecticut, during the month of July, 1959. The outbreak began on July 10, 1959, when a 10-year-old boy was found to have a fever, headache, and vomiting. He was hospitalized and died on July 12, 1959. Other cases of aseptic meningitis were reported on July 13, 1959. Another boy from the same family, who had the same illness, was hospitalized on July 14, 1959. The outbreak continued until July 15, 1959, when the last case was reported. The outbreak was limited to the town of Bristol, Connecticut, and did not spread to other parts of the state.

Six cases of aseptic meningitis with rash were reported in the town of Bristol, Connecticut, during the month of July, 1959. The outbreak was limited to the town of Bristol, Connecticut, and did not spread to other parts of the state.

Figure 1: CURRENT U.S. POLIO INCIDENCE COMPARED WITH YEARS 1952-1956

DATA PROVIDED BY NATIONAL OFFICE OF VITAL STATISTICS



* NATIONAL OFFICE OF VITAL STATISTICS (CONTINUED ON NEXT PAGE)

Table 1

TREND OF 1957 POLIOMYELITIS INCIDENCE

State and Region	Cases Reported to NOVS* for Week Ending:						Six Week Total	Comparable Six Week Totals in:			
	8-3	8-10	8-17	8-24	8-31	9-7		1956	1955	1954	1953
UNITED STATES											
Paralytic	71	70	81	95	77	73	467	2039	3703		
Nonparalytic	172	205	190	233	144	124	1068	2223	4800		
Unspecified	54	81	48	69	55	47	354	967	3175		
Total	297	356	319	397	276	244	1889	5229	11678	12084	12599
NORTH EAST											
Paralytic	8	3	-	10	9	5	35	114	1443		
Total	34	16	14	41	39	28	172	478	4711	1935	2485
Maine	1	-	-	2	-	1	4	6	94	51	147
New Hampshire	1	1	-	-	1	-	3	1	146	29	36
Vermont	-	-	-	-	1	1	2	4	61	22	42
Massachusetts	2	1	-	1	-	1	5	42	2130	356	182
Rhode Island	-	-	-	-	-	-	-	6	184	47	118
Connecticut	3	-	1	3	6	3	16	33	337	111	134
New York	15	7	5	22	19	12	80	246	1143	603	1063
New Jersey	5	5	5	8	8	9	40	89	299	271	320
Pennsylvania	7	2	3	5	4	1	22	51	317	445	443
NORTH CENTRAL											
Paralytic	24	24	36	28	22	22	156	924	1188		
Total	115	182	167	192	143	115	914	2566	4173	4351	5659
Ohio	23	30	17	29	16	10	125	235	535	789	1033
Indiana	8	8	19	17	6	4	62	159	177	268	287
Illinois	20	25	20	42	31	32	170	969	642	730	922
Michigan	27	40	47	53	47	25	239	264	571	760	1005
Wisconsin	12	28	32	25	20	16	133	210	1288	176	289
Minnesota	8	6	2	-	1	4	21	85	309	267	1069
Iowa	2	6	8	8	2	7	33	323	290	542	284
Missouri	7	10	10	5	11	8	51	155	89	236	332
North Dakota	2	2	-	-	3	-	7	8	23	50	90
South Dakota	-	18	4	2	2	-	26	13	29	31	80
Nebraska	1	3	3	3	3	5	18	68	111	279	80
Kansas	5	6	5	8	1	4	29	77	109	223	188
NORTH WEST											
Paralytic	1	2	1	6	2	3	15	56	155		
Total	5	5	3	8	2	6	29	172	316	362	336
Montana	-	1	-	1	2	1	5	10	44	30	80
Wyoming	1	-	1	1	-	1	4	15	7	95	23
Idaho	1	3	1	1	-	1	7	34	51	38	18
Washington	-	-	1	4	-	2	7	74	118	102	117
Oregon	3	1	-	1	-	1	6	39	96	97	98

* National Office of Vital Statistics.

(CONTINUED ON NEXT PAGE)

Table 1 (Continued)

State and Region	Cases Reported to NOVS* for Week Ending:						Six Week Total	Comparable Six Week Totals in:			
	8-3	8-10	8-17	8-24	8-31	9-7		1956	1955	1954	1953
SOUTH EAST											
Paralytic	21	19	20	32	19	21	132	269	406		
Total	59	66	59	61	36	36	317	646	1130	2104	1824
Delaware	-	2	-	-	-	-	2	8	23	15	15
Maryland	1	1	-	2	-	-	4	22	101	70	217
D. C.	6	1	7	7	6	7	34	5	18	32	27
Virginia	7	4	2	11	3	5	32	97	130	223	305
West Virginia	3	1	2	1	2	1	10	40	73	139	203
North Carolina	21	25	22	12	6	5	91	116	188	303	265
South Carolina	3	6	4	1	1	3	18	39	121	94	57
Georgia	3	4	6	7	2	2	24	93	64	279	130
Florida	3	8	-	5	1	7	24	80	92	320	158
Kentucky	7	6	7	7	7	3	37	61	186	309	122
Tennessee	3	6	7	6	8	3	33	55	80	215	218
Alabama	2	2	2	2	-	-	8	30	54	105	107
SOUTH CENTRAL											
Paralytic	10	12	12	11	15	16	76	372	291		
Total	44	43	40	51	32	36	246	693	790	1478	885
Mississippi	7	3	5	4	1	2	22	84	41	150	102
Arkansas	1	4	3	2	1	1	12	83	67	90	106
Louisiana	4	9	6	6	12	3	40	195	78	126	99
Oklahoma	9	7	5	9	2	8	40	68	96	179	187
Texas	23	20	21	30	16	22	132	263	508	933	391
SOUTH WEST											
Paralytic	7	10	12	8	10	6	53	304	220		
Total	40	44	36	44	24	23	211	672	573	1854	1410
Colorado	2	3	-	2	1	2	10	62	78	148	79
New Mexico	4	5	6	-	1	2	18	29	42	83	30
Arizona	1	3	2	1	1	-	8	31	37	59	185
Utah	-	-	-	-	1	3	4	76	18	56	60
Nevada	-	-	-	-	-	-	-	13	11	51	13
California	33	33	28	41	20	16	171	461	387	1457	1043
TERRITORIES											
Alaska	-	-	-	-	-	1	1	3	26	100	6
Hawaii	-	-	-	-	-	2	2	8	31	19	5
Puerto Rico	6	3	4	1	-	4	18	1	3	-	3

*National Office of Vital Statistics.

Table 2

PARALYTIC POLIOMYELITIS OCCURRING WITHIN 30 DAYS OF LAST VACCINE INOCULATION
Cases Reported to PSU September 5 thru September 11, 1957

PSU Case No.	County	Ini- tials	Age	Sex	Date Inoc.	Mfr.	Lot No.	Date First Symp.	Date First Paral.	Site Inoc.	Site First Paral.	Extent Paral.	Remarks
Cal-320	L.A.	JOH	1	M	6-17-57 7-29-57	? PD	? 029892	8-12-57	8-19-57	LA LA	RL RL	RL	
Ill-491	Adams	MCB	4½	F	5-9-57 6-20-57	L L	697785 697785	6-25-57	?	LA LA	LL	LL	172 cells
Wisc-118	Racine	DWC	23	M	10-16-56 11-20-56 7-19-57	? ? ?	? ? ?	8-15-57	8-21-57	? ? ?	RA	RA,LL, Trunk	

Table 3

1957 PARALYTIC POLIOMYELITIS CASES FOLLOWING THREE INOCULATIONS OF VACCINE
(Reports through September 5 thru September 11, 1957)

3V Case No.	State	County	Ini- tials	Age	Sex	Date 1st Symp.	Cerebro- Spinal Fluid	Site of Para.	Dates of Vacc. Inoc.	Mfr.	Lot No.
82	Pennsylvania	Pooli (Preliminary Report)	WS	4½	M	7-17-57		leg	Spring '55 Spring '55 Fall '55	? ? ?	? ? ?
83	Texas	Dallas (Preliminary Report)	RZ	12	F	7-10-57		bulbar weak legs	? '55 ? '55 ? '55	? ? ?	? ? ?
84	Mississippi	Prentiss (Preliminary Report)	KMH	5	M	6-8-57		LA, legs	5-6-56 6-2-56 2-1-57	? ? ?	? ? ?
85	Wisconsin	Racine	DWC	23	M	8-15-57		RA, LL, Trunk	10-16-56 11-20-56 7-19-57	? ? ?	? ? ?
86	South Carolina	Greenville (Preliminary Report)	RJH	3	F	8-1-57		?	? ? ?	? ? ?	? ? ?

Table 4

POLIOMYELITIS VACCINE REPORT through 9-6-57

(Data provided by the Polio Vaccine Activity, BSS, USPHS.
Listed in 1000's of cc's of Net Bottled Vaccine)

VACCINE RELEASED						
<u>Period</u>	<u>Lilly</u>	<u>Parke, Davis</u>	<u>Pitman- Moore</u>	<u>Wyeth</u>	<u>Sharpe & Dohme</u>	<u>Cutter</u>
July	5,047	1,843	1,239	378	1,015	-
August	5,840	3,704	1,339	394	864	-
September 1-6	2,039	-	1,314	257	-	-
Cumulative to date	121,622	30,133	30,841	9,623	9,377	401

VACCINE SHIPPED						
<u>Period</u>	<u>NFIP</u>	<u>Public Agencies</u>	<u>Commercial Channels</u>	<u>Export</u>	<u>Total</u>	
1955	13,541	7,893	6,233	-	27,667	
1956	194	45,588	24,784	6,477	77,043	
1957						
January-March	8	19,306	13,483	4,111	37,538	
April	-	8,639	5,161	1,360	15,161	
May	73	5,365	3,767	536	9,740	
June	70	2,734	1,349	378	4,531	
July	-	4,642	4,903	327	9,871	
August	-	4,133	4,037	1,099	9,269	
Cumulative Totals	13,886	98,930	63,716	14,289	190,822	

VACCINE INVENTORY				
<u>Week Ending</u>	<u>Unshipped by Manufacturers</u>	<u>In State and Local Health Departments</u>	<u>In Commercial Channel and Physicians Office</u>	<u>Total</u>
8-16-57	2,032	4,180	3,654	9,865
8-23-57	10,290	3,855	3,009	17,153
8-30-57	7,565	5,004	2,918	15,487