



POLIOMYELITIS

SURVEILLANCE REPORT

FOR ADMINISTRATIVE USE

Report No. 136

December 20, 1957

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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, 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.

A. CURRENT POLIOMYELITIS MORBIDITY TRENDS

National poliomyelitis incidence has remained stable during the past two weeks, with 44 cases reported to NOVS for the week of December 6 and 44 for the week of December 13, following 57 cases reported the week ending November 30. Figure 1 presents the national poliomyelitis incidence curves by weeks for the years 1947, 1952 through 1956, and to date in 1957.

Table 1 shows the distribution of total cases by state and region, and of paralytic cases by region, for the past six weeks, with six-week totals for the comparable periods of the past four years.

Erratum - In PSU Report No. 135, Current Poliomyelitis Morbidity Trends, page two, a tabular error was made in the second table. The cumulative total of paralytic cases reported through the 48th week of 1955 should have been 10,277 instead of 20,277, with the resulting total 28,559 instead of 38,559, and the percent paralytic 48 instead of 65. It is regretted also that a footnote was omitted explaining the difference between the 1955 and 1956 cumulative totals as listed in the first table on the page compared with the totals in the second table. The first figure represents preliminary data (more directly comparable with the 1957 preliminary data), whereas the cumulative totals by paralytic status, listed in the second table, represent partially revised data.

B. PRELIMINARY AGE DISTRIBUTION ANALYSIS OF 1957 POLIOMYELITIS CASES

Provisional and partially complete data from state and territorial health departments participating in the nationwide analyses of current epidemiologic characteristics of poliomyelitis were presented in PSU Reports No. 123 and 133. Additional preliminary data reported from 43 states, 2 territories and the District of Columbia on poliomyelitis cases occurring January to October (1) are reviewed in this report. It must be noted that since these data are preliminary and incomplete and since crude population estimates are used, interpretations of the data must still be limited.

The total of 3931 reported cases includes 1636 paralytic, 2227 non-paralytic, and 68 unspecified. Of the cases with paralytic status specified, 42 percent were reported as paralytic.

The table below presents the paralytic poliomyelitis cases by vaccination history. Of the total paralytic cases with vaccination status known, 29 percent had received one or more doses of polio vaccine. The largest proportions vaccinated were seen in the 5-9 year age group (50 percent) and in the 10-14 year age group (41 percent); these two groups include children vaccinated in the 1955 school clinics and remain the most thoroughly vaccinated population groups. It may also be seen from the table below that 32 percent of all paralytic cases under age 20 had been vaccinated.

It has been estimated* that as of September 1, 1957, about 70 percent of the population under age 20 had received at least one inoculation of polio vaccine.

PARALYTIC POLIOMYELITIS CASES
PERCENTAGE REPORTED AS VACCINATED
January - October 1957 (1)

Age Group	Total** Para. Cases	Vaccination Status Known	Not Vaccinated	Vaccinated (one or more doses)	Percent Vaccin***
0-4	743	713	540	173	24
5-9	298	286	144	142	50
10-14	136	132	78	54	41
15-19	99	96	72	24	25
Total 0-19	1276	1227	834	393	32
20-39	312	300	248	52	17
40 /	45	44	40	4	9
TOTAL	1663	1571	1122	449	29

(1) January-September data from 43 states, two territories and the District of Columbia. October data from 33 states.

* Estimates prepared by the Polio Vaccine Activity, Bureau of State Services, Public Health Service, Washington, D. C., supported by data from a survey conducted during August, 1957, by the Bureau of the Census. (See Vaccine Distribution, page 6 of this report.)

** Omitting three cases with age unknown.

*** Percent vaccinated (one or more doses) of those with vaccination status specified.

The paralytic and nonparalytic cases and estimated age-specific attack rates for those cases reported from the United States are presented in the table below. For paralytic cases the highest attack rate was at age one, a rate of 5.7 per 100,000, with the rates decreasing with increasing age. A slight depression in the age-specific attack rate pattern is apparent at ages 9 (1.0) and 10 (.9).

AGE-SPECIFIC ATTACK RATES IN THE UNITED STATES

January-October, 1957*

Age Group	Population (1000's)**	Cases		Rate/100,000	
		Paralytic	Nonparalytic	Paralytic	Nonparalytic
< 1	3455	117	35	3.4	1.0
1	3455	198	54	5.7	1.6
2	3415	188	72	5.5	2.1
3	3349	124	83	3.7	2.5
4	3269	111	118	3.4	3.6
5	3186	89	116	2.8	3.6
6	3126	69	136	2.2	4.4
7	3011	53	149	1.8	4.9
8	3030	55	118	1.8	3.9
9	3026	30	97	1.0	3.2
10	3259	28	100	.9	3.1
11	2362	28	74	1.2	3.1
12	2341	28	73	1.2	3.1
13	2354	26	71	1.1	3.0
14	2495	25	54	1.0	2.2
15-19	9861	99	247	1.0	2.5
20-24	8767	98	200	1.1	2.3
25-29	9717	106	215	1.1	2.2
30-34	10503	69	108	.7	1.0
35-39	10175	37	59	.4	.6
40+	51984	43	44	.1-	.1-
TOTAL	146140	1621	2223	1.1	1.5

* January-September data from 43 states and the District of Columbia. October data from 33 states.

** Preliminary crude total population estimates for 43 states; age-specific estimates for years 1-14 arbitrarily obtained by moving 1956 estimates forward one year and age-group estimates obtained by increasing 1956 estimates proportionate to the 1955-1956 increase. For under one year, the 1956 estimate was used.

The frequency of paralysis by age group for vaccinated and unvaccinated cases is shown in Table 2. The proportion paralytic among unvaccinated cases (50 percent) is higher than among vaccinated, with the vaccinated cases showing a progressive decrease in proportion paralytic,

from 42 percent for cases which had received one dose of vaccine to 21 percent for cases which had received three or more doses. A similar progressive decrease is apparent in each of the age groups up to age 15; over age 15 the proportion paralytic is similar for vaccinated cases regardless of dosage.

C. ROUTINE POLIOMYELITIS SURVEILLANCE

1. Under-30-Day Vaccinated Cases - During the two week period ending December 18, PSU received reports of three paralytic and two non-paralytic poliomyelitis cases with onset of symptoms within 30 days of a polio vaccine inoculation. The three paralytic cases are reviewed briefly below.

a. Mississippi - A two year old male had onset of symptoms 24 days following a third polio vaccine inoculation (vaccine manufacturer and lot number unknown). Site of inoculation was unknown; paresis developed in the left leg.

b. Massachusetts - A 35 year old female developed paralysis (site unknown) two days following a second polio vaccine inoculation (Lilly vaccine, lot number unknown).

c. California - A two year old male was left with residual left leg weakness upon hospital discharge. Onset was 15 days following second inoculation in the left arm. Vaccine used was Parke, Davis #029891 (700,000 cc's distributed in July); no other paralytic cases have been reported to PSU in association with this lot of vaccine.

2. Triply-Vaccinated Cases - Reports of 19 paralytic and 16 non-paralytic triply-vaccinated poliomyelitis cases were received during the two-week period ending December 18. The paralytic triply-vaccinated cases are listed in Table 3.

PSU has now received reports of 144 paralytic and 477 nonparalytic cases in triply-vaccinated individuals with onset in 1957. One report of a triply-vaccinated polio case did not have paralytic status specified.

3. Vaccine Distribution - Current and cumulative vaccine shipments, releases and inventory estimates are presented in Table 4.

The Vaccine Activity Unit, Bureau of State Services, Public Health Service, has provided estimates of vaccinated populations in the U.S., revised in accordance with data derived from a survey conducted during August, 1957, by the Bureau of the Census. These revised vaccinated population estimates are listed below by number of doses and age group.

	Millions of Individuals Vaccinated as of December 1, 1957		
	<u>Under Age 20</u>	<u>Age 20-40</u>	<u>TOTAL</u>
With only one injection	3	2	5
With only two injections	15	10	25
With only three injections	<u>30</u>	<u>4</u>	<u>34</u>
TOTAL VACCINATED(at least one injection)	48	16	64
ESTIMATED 1957 U.S. POPULATION	64	46	110

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

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

DATA PROVIDED BY NATIONAL OFFICE OF VITAL STATISTICS

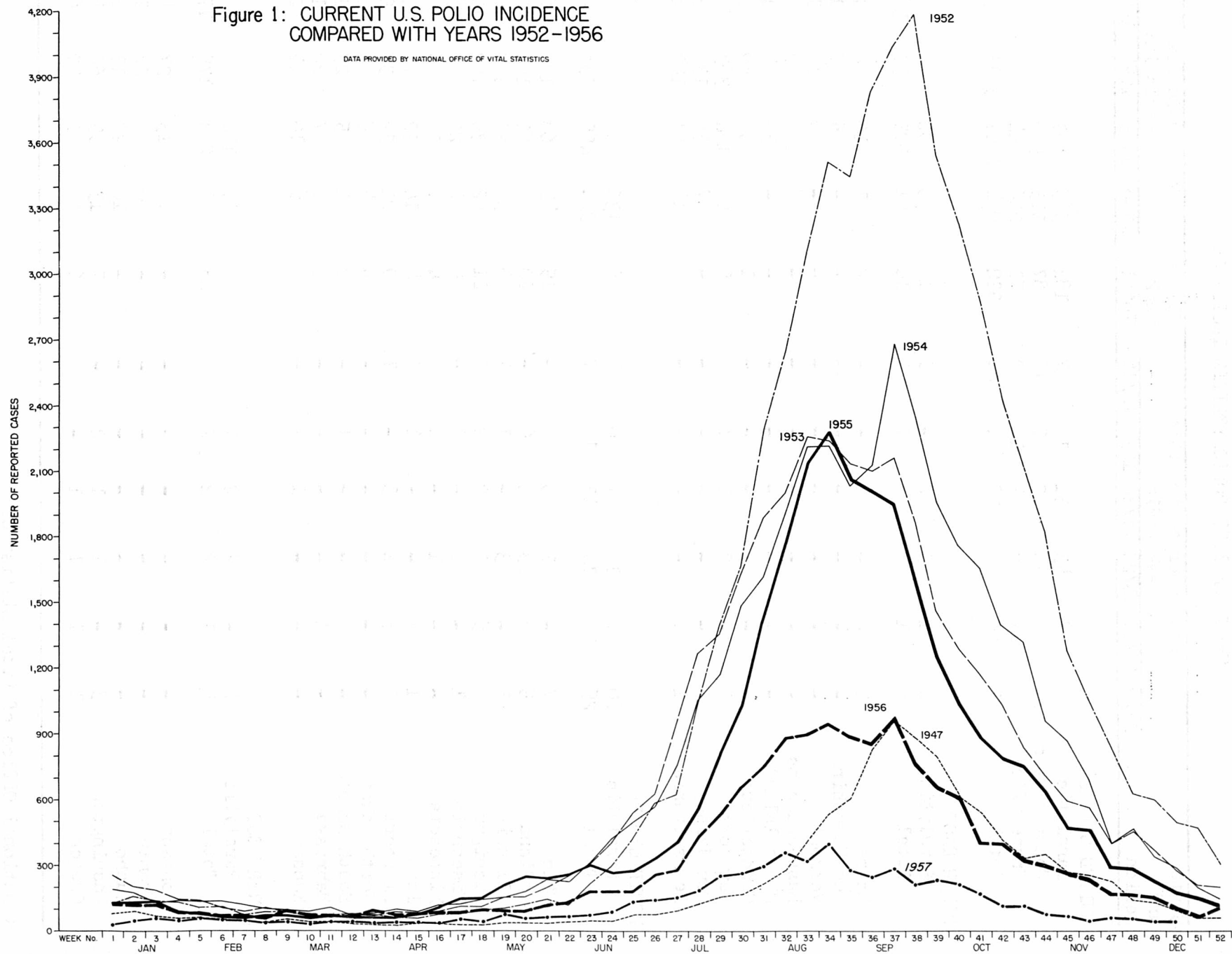


Table 1

TREND OF 1957 POLIOMYELITIS INCIDENCE

State and Region	Cases Reported to NOV5*						Six Week Total	Comparable Six Week Totals in:			
	for Week Ending:							1956	1955	1954	1953
	11/9	11/16	11/23	11/30	12/7	12/14					
UNITED STATES											
Paralytic	39	27	43	31	17	27	184	565	891		
Nonparalytic	18	8	10	19	17	15	87	313	566		
Unspecified	15	11	6	7	10	2	51	206	444		
Total	72	46	59	57	44	44	322	1084	1901	3033	2639
NORTH EAST											
Paralytic	4	1	3	2	-	1	11	33	198		
Total	5	1	3	3	1	1	14	91	505	852	584
Maine	1	-	-	1	-	-	2	1	16	16	15
New Hampshire	-	-	-	-	-	-	-	-	5	7	16
Vermont	-	-	-	-	-	-	-	-	9	10	11
Massachusetts	-	-	-	-	-	-	-	5	174	82	98
Rhode Island	-	-	-	-	-	-	-	-	39	4	16
Connecticut	-	-	1	-	-	-	1	6	33	69	21
New York	3	-	2	2	1	1	9	54	154	383	290
New Jersey	-	-	-	-	-	-	-	7	34	132	32
Pennsylvania	1	1	-	-	-	-	2	18	41	149	85
NORTH CENTRAL											
Paralytic	10	7	12	7	6	4	46	136	195		
Total	25	13	14	13	18	7	90	304	455	938	760
Ohio	7	-	1	3	4	-	15	41	68	189	161
Indiana	5	2	3	4	6	-	20	66	52	101	24
Illinois	3	-	3	-	1	1	8	37	59	150	102
Michigan	7	5	3	2	2	2	21	42	35	192	154
Wisconsin	1	-	2	-	1	-	4	41	126	82	55
Minnesota	-	-	1	-	1	2	4	8	28	25	100
Iowa	1	1	-	-	1	1	4	14	22	70	39
Missouri	1	3	1	3	-	1	9	22	32	31	50
North Dakota	-	-	-	-	-	-	-	4	5	4	15
South Dakota	-	1	-	-	1	-	2	2	5	23	19
Nebraska	-	1	-	-	-	-	1	22	7	28	12
Kansas	-	-	-	1	1	-	2	5	16	43	29
NORTH WEST											
Paralytic	2	-	2	2	1	2	9	27	114		
Total	4	1	2	2	2	2	13	59	213	175	177
Montana	-	-	-	-	-	-	-	12	13	27	40
Wyoming	-	-	-	-	-	-	-	6	2	26	12
Idaho	-	-	-	-	-	-	-	10	22	13	24
Washington	3	-	1	1	2	-	7	13	95	60	41
Oregon	1	1	1	1	-	2	6	18	81	49	60

* National Office of Vital Statistics

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Table 1 (Continued)

State and Region	Cases Reported to NOVS* for Week Ending:						Six Week	Comparable Six Week Totals in:			
	11/9	11/16	11/23	11/30	12/7	12/14	Total	1956	1955	1954	1953
SOUTH EAST											
Paralytic	5	7	11	6	3	12	44	100	87		
Total	14	14	19	14	4	15	80	192	198	423	289
Delaware	-	-	-	-	-	-	-	-	1	20	3
Maryland	-	-	4	5	1	6	16	13	17	26	31
Dist. of Col.	-	1	1	1	-	2	5	1	3	7	5
Virginia	-	-	3	-	1	2	6	14	15	44	31
West Virginia	-	2	1	-	-	1	4	7	11	15	24
North Carolina	1	1	1	4	1	-	8	33	46	35	30
South Carolina	1	-	1	1	-	1	4	9	12	19	15
Georgia	2	2	-	-	-	1	5	9	16	26	11
Florida	1	3	2	-	1	-	7	30	22	125	73
Kentucky	4	3	1	-	-	-	8	27	32	54	29
Tennessee	2	-	1	3	-	2	8	31	10	36	23
Alabama	3	2	4	-	-	-	9	18	13	16	14
SOUTH CENTRAL											
Paralytic	9	6	10	5	4	2	36	168	81		
Total	11	9	14	14	10	9	67	239	174	231	221
Mississippi	-	2	2	3	2	1	10	27	11	23	11
Arkansas	-	-	-	-	-	-	-	32	7	26	26
Louisiana	5	2	1	1	-	1	10	26	23	45	23
Oklahoma	1	1	1	1	-	-	4	24	20	10	33
Texas	5	4	10	9	8	7	43	130	113	127	128
SOUTH WEST											
Paralytic	9	6	5	9	3	6	38	101	216		
Total	13	8	7	11	9	10	58	200	362	414	608
Colorado	1	2	1	1	-	1	6	20	14	19	8
New Mexico	-	1	-	-	-	-	1	10	12	14	6
Arizona	1	-	-	-	1	-	2	11	8	9	19
Utah	1	-	-	-	1	-	2	21	6	36	29
Nevada	-	-	-	-	-	-	-	-	4	1	3
California	10	5	6	10	7	9	47	138	318	335	543
TERRITORIES											
	2	-	1	-	-	-	3	4	51	102	15
Alaska	-	-	-	-	-	-	-	-	2	38	3
Hawaii	-	-	1	-	-	-	1	2	48	8	11
Puerto Rico	2	-	-	-	-	-	2	2	1	56	1

* National Office of Vital Statistics

Table 2
REPORTED POLIOMYELITIS CASES
PERCENT PARALYTIC BY VACCINATION STATUS AND AGE
January-October, 1957 (1)

Age Group	Total Cases*	Cases with Vaccination Status Known	Cases Not Vaccinated	Vaccinated Cases Number of Doses**				Percent Paralytic Doses***			
				Doses Unknown	1	2	3	None	1	2	3/
0-4	1105	1063	722	66	59	136	80	75	66	59	34
5-9	914	884	296	138	49	147	254	49	47	22	20
10-14	508	494	176	69	26	92	131	44	31	18	15
15+	1330	1297	925	71	72	162	67	39	23	22	21
TOTAL	3857	3738	2119	344	206	537	532	53	42	31	21

(1) January-September data from 43 states and the District of Columbia. October data from 33 states.

* Omitted are 8 cases with age unknown and 66 with paralytic status unknown.

** Of cases with vaccination status known.

*** Of cases with vaccination status and number of doses specified.

Table 3

1957 PARALYTIC POLIOMYELITIS CASES FOLLOWING THREE INOCULATIONS OF VACCINE
(Reports December 5 through December 18, 1957)

3 V Case No.	State	County	Ini- tials	Age	Sex	Date 1st Symp.	Cerebro- Spinal Fluid	Site of Para.	Dates of Vacc. Inoc.	Mfr.	Lot No.
174	Tennessee	Grainger (Preliminary Report)	DHL	12	M	11-19-57		?	? ? ?	? ? ?	? ? ?
175	Massachusetts	Hampden (Preliminary Report)	RD	2	M	8-30-57		?	? ? ?	? ? ?	? ? ?
176	Massachusetts	Middlesex (Preliminary Report)	CZ	6	F	9-23-57		?	? ? ?	? ? ?	? ? ?
177	Indiana	Clark (Preliminary Report)	WB	7	M	10-24-57		?	? ? ?	? ? ?	? ? ?
178	Virginia	Spotsylvania (Preliminary Report)	JN	13	M	10-16-57		?	? ? ?	? ? ?	? ? ?
179	Virginia	Warwick (Preliminary Report)	DAG	18 mos.	M	9-?-57		?	? ? ?	? ? ?	? ? ?
180	California	?Los Angeles (Preliminary Report)	RB	5	M	10-5-57		?	? ? ?	? ? ?	? ? ?

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Table 3 (Continued)

3 V Case No.	State	County	Ini- tials	Age	Sex	Date 1st Symp.	Cerebro- Spinal Fluid	Site of Para.	Dates of Vacc. Inoc.	Mfr.	Lot No.
181	California	Los Angeles (Preliminary Report)	BHD	6	M	9-28-57		?	? ? ?	? ? ?	? ? ?
182	California	Los Angeles (Preliminary Report)	DDG	2	M	9-21-57		?	? ? ?	? ? ?	? ? ?
183	California	San Diego (Preliminary Report)	SL	11	M	10-26-57		?	? ? ?	? ? ?	? ? ?
184	California	Los Angeles (Preliminary Report)	KLS	5	M	10-5-57		?	? ? ?	? ? ?	? ? ?
185	California	? (Preliminary Report)	DT	3	M	10-19-57		?	? ? ?	? ? ?	? ? ?
186	California	Los Angeles (Preliminary Report)	JIW	34	M	10-12-57		?	? ? ?	? ? ?	? ? ?
187	California	Orange (Preliminary Report)	JW	1	M	9-21-57		?	? ? ?	? ? ?	? ? ?
188	Pennsylvania	Philadelphia (Preliminary Report)	RG	3	M	8-12-57		?	? ? ?	? ? ?	? ? ?

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3 V

Case

Case No.	State	County	Initials	Age
189	Mississippi	Bolwar	GBJ	7
190	Mississippi	Lee	DCW	2
191	Massachusetts	Hampden (Preliminary Report)	NV	3
192	Massachusetts	Hampden (Preliminary Report)	HC	5

Table 3 (Continued)

Sex	Date 1st Symp.	Cerebro- Spinal Fluid	Site of Para.	Dates of Vacc. Inoc.	Mfr.	Lot No.
M	8-28-57		? (Spinal)	11-28-55 2-6-56 11-19-56	PM L PM	175B023 649344 175B084
M	11-22-57		LL	3-20-57 4-30-57 10-29-57	L L ?	679904 697802 ?
F	6-24-57		?	? ? ?	? ? ?	? ? ?
M	9-18-57		?	? ? ?	? ? ?	?/ ? ?

Table 4

POLIOMYELITIS VACCINE REPORT through 12-13-57

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

VACCINE RELEASES						
Period	Lilly	Parke, Davis	Pitman- Moore	Wyeth	Sharp & Dohme	Cutter
August	5,840	3,704	1,339	394	864	-
September	10,332	2,603	2,664	257	1,028	-
October	1,015	1,809	1,347	-	515	-
November	-	180	1,356	802	1,112	-
December 1-13	-	1,152	-	-	479	-
Cumulative to date	130,930	35,877	34,893	10,425	12,512	401

VACCINE SHIPPED					
Period	NFIP	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 - June	151	36,044	23,760	6,385	66,970
July	-	4,642	4,903	327	9,871
August	-	4,133	4,037	1,099	9,269
September	1	3,036	3,654	1,272	7,962
October	1	504	359	1,813	2,676
November	1	541	480	819	1,841
December 1-6	-	135	99	72	306
Cumulative Totals	13,888	103,146	68,308	18,266	203,607

VACCINE INVENTORY			
Week Ending	11/22/57	11/29/57	12/6/57
Vaccine Unshipped by Manufacturers	20,474	20,106	20,952