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POLIOMYELITIS SURVEILLANCE
REPORT NUMBER 7
MAY 7, 1955 - 4:30 P.M.
INCLUDING A WEEKLY SUMMARY

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

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SPECIAL NOTE

The information provided in this report represents the latest data reported to the Poliomyelitis Surveillance Unit from State Health Departments, Epidemic Intelligence Service Officers, participating laboratories, and other pertinent sources. Much of the material is preliminary in nature and is subject to confirmation and change. It is distributed for the benefit of all participants with the understanding that it will not be released to the press or to unauthorized persons. Any release of this information will be strictly limited to the Office of the Surgeon General, United States Public Health Service, Washington, D. C. In such releases cases will be identified by state only; initials and residence will not be made public. State Health Officers, of course, are free to reveal any information they may wish concerning data from their State.

Dr. John Fox, Virus Laboratory, Tulane University, New Orleans, has isolated an agent, tentatively identified as Type 1 polio virus, from the stool of PSU Case No. LA-3. Growth has also been observed in cultures inoculated from tonsil and medulla of this fatal case. Dr. Fox reports that the viral effect on monkey kidney cells was observed within 24 hours of inoculation.

Three California cases previously under investigation were accepted today after more complete information was received. All were inoculated with Cutter vaccine. A previously reported case from Arizona (PSU Case No. Ariz-1) has now been classified as mumps encephalitis. Accepted cases total 51 at 4:30 p.m. today (May 7, 1955). Investigation of suspect cases is proceeding in Connecticut, Illinois and California.

NEAL NATHANSON

Neal Nathanson, M.D., Chief
Poliomyelitis Surveillance Unit

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE COMMUNICABLE DISEASE CENTER

Accepted Cases Associated with Poliomyelitis Vaccine

Daily Supplementary Report

PSU Case No.	Residence	Init- ials	Age	Sex	Date Inoc.	Date 1st Symp	Date 1st Para	Site Inoc.	Site 1st Para	Mfr	Lot No	Remarks
NEW CASES												
<u>California</u>												
Cal-21	SierraMadre	JP	1	F	4-19	4-28	5-1	?IA	?	C	E5972	Paraplegia
Cal-22	LosAngeles Co	LB	10	M	4-18	4-27	?	?RL	?	C	E5971	Paraplegia
Cal-23	LosAngeles Co	KJ	7	M	4-22	4-27	4-30	?IA	?IA	C	?E6038	IA, RL, paralysed

REVISIONS												
Ia-3	New Orleans	ED	2	M	4-26	5-1	5-3	IA	RA	C	E5973	Bulbar died 5-4 <u>?Type 1 virus</u> <u>in stool 5-7</u> Dr. Fox
Ariz-1	Kingman	BGT	7	F	4-25	4-30	5-3	IA	IA	C	?E5928	<u>Not polio -</u> <u>Measles</u> <u>Encephalitis</u>

(Revised Items are Underlined)

Code of abbreviations:

PSU - Poliomyelitis Surveillance Unit
Mfr - Manufacturer
C - Cutter Laboratories
L - Lilly Laboratories

IA - Left Arm
RA - Right Arm
LL - Left Leg or Buttocks
RL - Right Leg or Buttocks

MAY 7, 1955

SECOND WEEKLY SUMMARY

PSU Report Number 1, of May 1st, outlined the Poliomyelitis Surveillance Program and presented a summary of the data accumulated up to that time. Daily reports since that date have presented the new information and revisions in the case data as currently received.

This report will summarize all data received through May 6, and thus is the second Weekly Summary. It is planned to mail similar summaries each week-end and to send daily reports, except on Sundays, until further notice.

Organization

The organization of the Surveillance Program has progressed satisfactorily. Polio Reporting Officers in each state have been designated. Their office and home addresses and phone numbers are now being obtained and a list will be distributed soon. Epidemic Intelligence Service Officers have already been in contact with many of these Polio Reporting Officers and have offered their services for field investigations of cases.

Specimens for laboratory study have already been submitted for almost all of the cases reported thus far. Type 1 Poliomyelitis Virus has been isolated from three cases, two in California and one in Chicago.

The State Public Health Laboratories which are staffed and equipped for polio virus isolations and many virus laboratories in academic centers have expressed their desire to participate in the Surveillance Program and have been added to the mailing list to receive PSU Reports.

On Thursday, May 5th, a meeting of the coordinators of the Sectional Research Program of the National Institutes of Health met in New York City. A representative from the NFIP participated. It is anticipated that additional funds may become available to support polio diagnostic services. Further information will be distributed during the coming week.

Considerable discussion has followed the announced objective of the Surveillance Program to perform laboratory examinations on all cases of poliomyelitis occurring this year. Many have doubted the feasibility of such an ambitious proposal. Perhaps more reasonable objectives should be set: Namely,

- 1) to achieve laboratory confirmation on each case of polio in vaccinated persons.
- 2) to study as many household contacts of vaccinated cases as possible. Repeated examinations should be planned.
- 3) to study at least an equal number of unvaccinated cases.

Basic Reported Data

Attached is a tabulation consisting of the Weekly Cumulative Summary of all new cases, and revisions reported May 2 to May 6. It is enclosed for your convenience and is designed to be used with the original tabulation in PSU Report Number 1 in order to simplify any analyses you may wish to make on the total data. The next weekly summary will list the revised data on all accepted cases.

These data form the basis for the following 6 tables which summarize some of the characteristics of vaccine associated cases of poliomyelitis.

Incidence by State and Manufacturer

Table 1 shows that the 42 accepted cases associated with Cutter vaccine have been concentrated in the West particularly in California and Idaho, but single cases have appeared widely scattered through the country. The 7 accepted Lilly associated cases have occurred through the South and Southeast. No accepted cases have been associated with vaccines manufactured by Parke-Davis, Pittman-Moore and Wyeth Laboratories.

Correlation of Site of Inoculation and First Paralysis

Table 2 shows that among most of the Cutter associated cases a correlation exists between the site of inoculation and the site of first paralysis but in only one of 6 paralytic Lilly associated cases was such a correlation found.

Approximate Attack Rates and Lot Numbers

Table 3 presents an arrangement of the Cutter associated cases by groups for which estimates of the number of inoculations could be made. While the figures are rough it is possible to estimate approximate attack rates. These vary from one to four per 10,000 inoculations. The lowest incidence appears in the NFIP Clinic populations outside San Diego. The highest incidence groups are the Idaho NFIP Clinics and the Commercial Cases outside California. It should be noted that the rates estimated for the Commercial Cases are the least accurate because they have not been adjusted for the unknown but substantial amounts of the vaccine that were recovered after April 28th.

Incidence by Age and Distribution Outlet

The cases associated with Cutter vaccine from commercial sources concentrated among pre-school children with only 3 cases above 10 years of age (Table 4).

The NFIP Clinic cases for both Cutter and Lilly vaccine logically fall in the 6 to 8 year age group. No Lilly vaccine was distributed in commercial channels.

Intervals between Inoculation and First Paralysis

The interval between inoculation and first paralysis (Table 5) for the Cutter associated cases varied from 5 to 14 days with the majority clustering in the 7-9 day interval. Cases associated with

commercial outlets tend to show a somewhat greater spread of the interval than do those associated with NFIP Clinics. Several factors may be involved. The age of the two groups of cases differs. The time of inoculation is not known for the total group immunized. It is possible that children were inoculated by private physicians on the average earlier than in the scheduled NFIP Clinics

The number of cases associated with the Lilly vaccine is too small to show a pattern with regard to this interval.

Comparison of Expected and Reported Cases

Through the courtesy of the NFIP, information for each state was provided including estimated populations in 1st and 2nd grades, estimated number of children inoculated in NFIP Clinics through April 28th, and manufacturer of the vaccine provided to each state. These data have been consolidated giving an estimate of the number of inoculations given by each manufacturer (Table 6).

From data available in the Statistics Section of CDC an estimate was made of the number of cases of poliomyelitis that might be expected to have occurred purely by chance among these groups. This estimate was based on weekly 5 year medians of reported cases of poliomyelitis for each state. Extensive studies of the age distribution of poliomyelitis in 1952 revealed that 9.7 per cent of the cases both in the North and in the South occurred in 7 and 8 year old children. Therefore as a reasonable approximation it was assumed that 10 per cent of the 5 year median could be expected among 1st and 2nd grade children. These estimates for each state were then corrected for the per cent of the 1st and 2nd grade children inoculated prior to April 28th. Those estimates were consolidated and are shown in Table 6 as "expected cases". They may be compared with the "reported" cases occurring this year among 6, 7, and 8 year olds.

Only one case per week was expected among the 294,000 children who received Cutter vaccine whereas 5 and 12 cases were reported for the weeks ending April 23 and 30 respectively. Among the 2,250,000 children who received Lilly vaccine a total of 7 cases was expected by chance alone and a total of 6 has been reported to date.

For the other three manufacturers the expected number of cases is less than one per week. This low number is due to the relatively small total number inoculated and the fact that these vaccines were used for the most part in northern and central states where the expectancy of polio is low in April.

(This Summary Report has been prepared by Dr. A. D. Langmuir, Dr. Neal Nathanson, and Mr. Earl Diamond. Special assistance in the calculations in Table 6 was provided by Dr. R. W. Serfling, Mrs. Ida Sherman, Mr. Jack Karush, and Dr. Jack Hall).

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE COMMUNICABLE DISEASE CENTER

POLIOMYELITIS SURVEILLANCE UNIT

Accepted Cases Associated with Poliomyelitis Vaccine

Weekly Cumulative Summary

PSU Case No	Residence	Init- ials	Age	Sex	Date Inoc	Date 1st Symp	Date 1st Para	Site Inoc	Site 1st Para	Mfr	Lot No	Remarks
ALL NEW CASES AND REVISIONS, REPORTED MAY 2 - MAY 6												
<u>Arizona</u>												
Ariz-1	Mohave Co.	BT	7	F	4-25	4-30	5-3	IA	IA	C	E5928?	
<u>California</u>												
Cal-3	SanDiego	CE	8	F	4-16	4-25	4-27	IA	IA	C	E6038? E5970 E5928?	Type I Virus in stool 5-4 Dr. Lennette
Cal-5	Napa	GK	1	F	4-15	4-22	4-24	IA	IA	C	E6045? E5974	
Cal-6	Oakland	RF	4	M	4-18	4-24	4-26	IA	IA	C	E6045	Type I Virus in stool 5-2 Dr. Lennette
Cal-16	Vallejo	BG	2	F	4-21	4-27	5-3	IA	IA	C	E6045	
Cal-17	Riverside	TP	6	F	4-22	4-28	?	IA	RL	C	E5928	
Cal-18	San Marino	BC	12	F	4-20	4-26	4-29	RL	RL	C	E5971	
Cal-19	IaCanada	CC	4	F	4-22	4-24	4-27	?	IA	C	E5971	
Cal-20	Alameda Co.	JH	24	M	4-21	4-30	5-5	RA	RA	C	E6045	

PSU Case No	Residence	Init- ials	Age	Sex	Date Inoc	Date 1st Symp	Date 1st Para
<u>Colorado</u>							
Colo-1	Denver	SC	1	M	4-13	4-21	4-25
<u>Georgia</u>							
Ga-1	Columbus	KF	6	M	4-19	4-23	4-27
<u>Territory of Hawaii</u>							
TH-1	Hawaii	SV	7	M	4-26	5-2	5-4
<u>Idaho</u>							
Ida-7	Malad	SV	7	M	4-19	4-26	4-27
Ida-8	Preston	DC	7	M	4-19	4-26	4-29
Ida-9	Wallace	SB	5	F	4-21	4-27	5-2
<u>Indiana</u>							
Ind-1	N. Vernon	WC	7	M	4-20	4-27	4-29
<u>Illinois</u>							
Ill-1	Chicago	EK	1	M	4-16	4-21	4-25

Site Inoc	Site 1st Para	Mfr	Lot No	Remarks
Arm	-	C	E5972	Quadriplegia
RA	Bulb	L	5081-649340	
IA	IA	C	E6038	Bulbar
RA	RA	C	E6039? E6058?	
IA	IA	C	E6058	
IA	IA	C	E6039? E6058?	
IA	IA	L	8123-649335	
Leg	-	C	E6044	Paraplegia Type I Virus in Stool 5-3 Dr. Schaughnessy

PSU Case No	Residence	Init- ials	Age	Sex	Date Inoc	Date 1st Symp	Date 1st Para
<u>Louisiana</u>							
Ia-3	New Orleans	ED	2	M	4-26	5-1	5-3
<u>Missouri</u>							
Mo-1	St. Louis	ES	4	M	4-14 4-21	4-26	4-26
<u>Nevada</u>							
Nev-1	Ely	MS	2	M	4-17	4-28	?
Nev-2	Ely	JD	8	M	4-17	4-30	?
<u>New York</u>							
NY-1	Tarrytown	TG	5	F	4-16	5-1	5-2
<u>Oregon</u>							
Ore-1	Portland	KK	4	M	4-20	4-27	4-30
Ore-2	Portland	SJ	11	F	4-15	4-29	4-29
Ore-3	Portland	EH	4	F	4-20	4-29	5-3
<u>Texas</u>							
Tex-1	Houston	MH	7	M	4-19	4-27	4-28
Tex-2	?	EB	1	F	4-19	4-26	5-3

Site Inoc	Site 1st Para	Mfr	Lot No	Remarks
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IA	RA	C	E5973	Died 5-4 Bulbar
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RA		C	?	Received 2 injections
RA	RA	?	?	

RL	RL	C	E6045	
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LL	?	C	E6045	Paralysis LL, IA
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IA	LL	C	E6044	slight weakness LL only
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IA	IA	C	E5972	
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IA	Legs	C	E5972	
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IA	IA	C	E5972	
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IA	Bulb	L	7078-649343	
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LL	Legs	C	E6045	
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PSU Case No	Residence	Init- ials	Age	Sex	Date Inoc	Date	Date	Site Inoc	Site	Mfr	Lot No	Remarks
						1st Symp	1st Para		1st Para			
<u>Washington</u>												
Wash-1	Wiley City	VB	4	F	4-18	4-25	4-27	?	LA	C	E5972	
<u>West Virginia</u>												
W Va-1	Princeton	ES	7	M	4-24	4-29	5-1	LA	LL	L	8122-649334	
W Va-2	Mabscott	TAC	6	M	4-20 ? 4-21 ?	5-4	5-5	LA	Legs	L	8122-649334	An unvaccinated case also reported in same county.

Code of Abbreviations:

PSU - Poliomyelitis Surveillance Unit
Mfr - Manufacturer
C - Cutter Laboratories
L - Lilly Laboratories

LA - Left Arm
RA - Right Arm
LL - Left Leg or Buttocks
RL - Right Leg or Buttocks

Table 1

Cases by State and Manufacturer

(PSU Accepted Cases through May 6, 1955)

State	Cutter	Lilly	Parke Davis	Pittman Moore	Wyeth	Total
California	19*					19
Idaho	9					9
Oregon	3					3
Louisiana	1	2*				3
Washington	1					1
Colorado	1					1
Illinois	1					1
Indiana		1				1
Georgia		1				1
New York	1					1
West Virginia		2				2
Texas	1	1				2
Hawaii	1					1
Missouri	1					1
Nevada	2					2
Arizona	1					1
Totals	42	7	0	0	0	49

* Includes 1 non-paralytic case.

Table 2

Cases by Site of Inoculation,
Site of First Paralysis, and Manufacturer

(PSU Accepted Cases through May 6, 1955)

<u>Inoculation</u>	<u>Site of First Paralysis</u>	<u>Manufacturer</u>	
		<u>Cutter</u>	<u>Lilly</u>
Left arm	Left arm	18	1
Right arm	Right arm	4	
Left leg	Left leg	1	
Right leg	Right leg	4	
Arm	Other arm	1	
Arm	Leg	3	2
Arm	Bulbar		2
Non-paralytic		1	1
Data incomplete		10	1
		42	7

Table 3

Cases and Approximate Attack Rates
Among Certain Groups Receiving Cutter Vaccine

(PSU Accepted Cases through May 6, 1955)

Distribution Outlet	Estimated Inoculations*	Accepted Cases	Approximate rates per 10,000 inoculations	Lot Numbers	Number of Cases
<u>NFIP CLINICS</u>					
San Diego	30,000	4	1-2	?E6038) ?E5970) ?E5928)	4
Idaho	30,000	9	2-3	E6058 ?E6039) ?E5058)	5 3
California (except San Diego), Arizona and Hawaii	170,000	5	0-1	?E6039) ?E5058) ?E6039	1 1 1 1 1
<u>COMMERCIAL DISTRIBUTION</u>					
California	Amount Distributed** 110,000	12	1-2	E6045 E5971 E5972 ?E6045) ?E5974)	5 5 1 1
United States (except California)	60,000	12	2-4	E5972 E5973 E6044 E6045 ?	5 1 2 3 1

* Numbers of estimated inoculations in NFIP Clinics through 4/28. Information provided by Dr. G. Foard McGinnes and Dr. Thomas D. Dublin who consolidated reports from States.

** Approximate figures not corrected for the amounts recovered.

Table 4

Cases by Distribution Outlet and Age
(PSU Accepted Cases through May 6, 1955)

<u>Age in Years</u>	<u>Cutter</u>		<u>Lilly</u>
	<u>NFIP Clinics</u>	<u>Commercial</u>	<u>NFIP Clinics</u>
1		6	
2		4	
3		1	
4		8	
5		3	
6	4		4
7	8		3
8	5		
9			
10			
11 and over		3	
Totals	<u>17</u>	<u>25</u>	<u>7</u>

Table 5

Cases by Distribution Outlet and
Interval between Inoculation and Onset of Paralysis

(PSU Accepted Cases through May 6, 1955)

<u>Interval Inocu- lation to Onset of Paralysis</u>	<u>Cutter</u>		<u>Lilly</u>
	<u>NFIP Clinics</u>	<u>Commercial</u>	<u>NFIP Clinics</u>
5 days		2	
6 "	2	1	
7 "	2	2	1
8 "	7	2	1
9 "	1	5	3
10 "	1	3	
11 "	1	1	
12 "		2	
13 "		1	
14 "		3	1
Non-paralytic	1		1
Data incomplete	<u>2</u>	<u>3</u>	
Totals	<u>17</u>	<u>25</u>	<u>7</u>

Table 6

Comparison of Expected* and Reported** Cases of
Poliomyelitis among Children Inoculated in NFIP
Clinics from April 15 to April 28, 1955

Vaccine Manufacturer***	Number Vaccinated	Cases	Week Ending				
			Apr 16	Apr 23	Apr 30	May 7	May 14
CUTTER	294,000	Expected	0-1	1	1	1	1
		Reported	-	5	12	-	-
LILLY	2,250,000	Expected	2	3	4	4	5
		Reported	-	3	3	-	-
PARKE-DAVIS	635,000	Expected	0-1	0-1	0-1	0-1	0-1
		Reported	-	0	0	-	-
PITTMAN-MOORE	390,000	Expected	0-1	0-1	0-1	0-1	0-1
		Reported	-	0	0	-	-
WYETH	580,000	Expected	0-1	0-1	0-1	0-1	0-1
		Reported	-	0	0	-	-

* Expected cases estimated from weekly 5-year medians of cases of poliomyelitis reported to National Office of Vital Statistics by the States.

** Reported cases for ages 6, 7, or 8 having onsets between April 17 and April 30 and accepted by PSU.

*** CUTTER vaccine was used in Idaho, Nevada, Arizona, New Mexico, and Southern California.

LILLY Vaccine was used in Texas, Oklahoma, Louisiana, Arkansas, Mississippi, Alabama, Tennessee, Florida, Georgia, South Carolina, North Carolina, Virginia, West Virginia, Indiana, part of Ohio, and Colorado.

PARKE-DAVIS vaccine was used in Michigan, Illinois, Iowa, Wyoming, and Utah.

PITTMAN-MOORE vaccine was used in Kentucky, Missouri, Kansas, and Nebraska.

WYETH vaccine was used in Pennsylvania, Delaware, Maryland, District of Columbia, and part of Ohio.