

POLIOMYELITIS SURVEILLANCE REPORT THIRD YEAR NO.108 MARCH 29, 1957

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Public Health Service Bureau of State Services  
Communicable Disease Center  
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SPECIAL NOTE

The information in this report represents a factual summary of data reported to the Poliomyelitis Surveillance Unit from State Health Departments, Epidemic Intelligence Service Officers, participating Laboratories and other pertinent sources. All readers should be cautioned regarding the interpretation of these data, many of which are preliminary and provisional in nature. 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.

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## I. Current Poliomyelitis Morbidity Trends

Poliomyelitis incidence by weeks for 1957, with similar data for the first five months of the five preceding years, is presented in Figure 1. National incidence has continued at a low level for the past two weeks. The National Office of Vital Statistics received reports of 34 cases for the week ending March 16, and 35 cases for the week ending March 23.

Table 1 presents reported incidence for the past six weeks by states and regions, with six-week totals for the previous four years.

Nebraska has experienced a somewhat increased polio incidence for this time of year although no localized outbreak has been apparent. Half of the last 14 reported cases are in persons over 25 years of age and not vaccinated. Type I poliovirus has been isolated.

## II. Reactions Following Administration of Polio Vaccine

Data have been reported to PSU concerning a number of illnesses occurring shortly after polio vaccine administrations. These non-polio illnesses may be roughly classified into four groups: 1) Neurologic 2) Allergic 3) Hematologic, and 4) Renal. At this time it is impossible to reach any final conclusion in evaluation of the etiologic relationship of polio vaccine to these illnesses. Obviously, reporting of such reactions to PSU is far from complete, and we would urge that reports of any possible reactions be submitted in order that they may be compared on a nation-wide basis.

However, the findings to date may be summarized as follows:

- 1) reported neurological post-vaccinal illnesses are a heterogeneous group with widely variable clinical characteristics, occurring at differing intervals after inoculation. Although no pattern is presently evident, collection of further reports must continue,
- 2) allergic reactions both localized or general and of variable severity apparently follow vaccination in rare instances,
- 3) there is little evidence of hematologic or renal reactions to vaccination,
- 4) it is evident that significant reactions to the vaccine must be occurring at a very low frequency in view of the fact that some 100 million doses of vaccine have been administered.

### NEUROLOGIC REACTIONS

The study of neurological illnesses occurring in the Placebo-Control and Vaccinated Groups during the 1954 Field Trials (Evaluation of 1954 Field Trials of Poliomyelitis Vaccine, Summary Report, American Journal of Public Health, Vol. 45, May, 1955) has been summarized in PSU Report No. 88, August 17, 1956, together with the first twelve cases of neurological illness reported to us. Three subsequent reports of neurological reactions possibly related to vaccine have been listed in PSU Reports Nos. 93, September 21, 1956 and 102, December 14, 1956. A line-listing summary of these cases is presented below followed by reports of seven additional cases subsequently received.

POSSIBLE NEUROLOGICAL REACTIONS TO POLIOMYELITIS VACCINE

Case No.	Polio Vaccination	Interval to Onset	Illness & Duration	Outcome
1	Second	2 days	Transverse myelitis	Paraplegic
2	Second	24 hours	Encephalitis	?Residual
3	First	24 hours	Sudden Death	PM Exam: Interstitial Pneumonia, moderate;Acute Cerebral Edema
4	First	24 days	Spastic paresis	?
5	First	20 days	Spastic paresis, 6 wks.	Recovered
6	Second	1 day	Headache, fever, 1 month	Recovered
7	First	24 hours	Meningismus, 24 hours	Recovered
8	First	24 hours	Meningismus, 24 hours	Recovered
9	First	24 hours	Toxic Labyrinthitis, 2 wks.	Recovered
10	First	9 days	Herpes Zoster	Recovered
11	First	7 days	Acute Pharyngitis and febrile convulsion, 24 hours.	Recovered
12	First	24 hours	Pharyngitis, febrile convulsion, 24 hours.	Recovered
13	First	2 days	Spastic Paralysis	?
14	Second	5 days	Myelitis	Recovered
15	First	24 hours	Encephalitis, ?Pertussis Antigen	Spastic quadriplegia, persistently elevated temp, requires tube feeding.

Case #16: (Reported to Dr. D. S. Fleming, Minnesota Department of Health, Minneapolis)

J.C., male, age 16

Received first injection of polio vaccine, Lilly Lot 679903, on 11-23-56. About 3 days later he noted peculiar vision in one eye. Consulted ophthalmologist who discovered a central retinal vein thrombosis in one eye, estimated to be 4 to 5 days old. Patient had no other symptoms.

Case #17: (Reported by Dr. Mila Pierce, University of Chicago, Chicago, Illinois.)

C.L., female, age 7

Present Illness:

6-8-56 - low grade fever for 3 days with coryza, enlarged suboccipital nodes and fatigue. Diagnosed in retrospect as possible rubella.

6-13-56 - first inoculation polio vaccine.

late June - personality change, behavior problems and restlessness.

7-13-56 - second inoculation polio vaccine, three hours after which the patient appeared confused, ran in circles.

7-15-56 - similar attack, lasting about one and one-half hours, with stiffness, urinary incontinence, and inability to talk.

7-17-56 - started on dilantin and phenobarbital, but with increased frequency of attacks, as many as twenty per day being recorded by the patient's father. Spells characterized by giggling followed by screaming; patient conscious and cognizant during attacks.

8-4-56 - Admitted to University of Chicago Hospital.

Past History:

Birth, feeding and development normal. Three siblings healthy.

Summer allergic rhinitis in past.

Physical Examination: P 110, R 32, BP 114/50.

Tonsils and pharynx injected, no exudates. Neck supple. Cervical nodes moderately enlarged. Skin clear. No cyanosis or clubbing. Neurological - Alert, highly apprehensive. Fundi, pupillary reactions, and eye motions normal. Knee jerks absent. Flexor plantar reflexes.

Laboratory Data: WBC 12,450, (86 P, 17 L, 1 M, 2 E). Urine normal.

Tuberculin negative. CSF on 8-8-56 revealed clear fluid with 18 lymphs and protein 10.6 mgm %. Culture negative.

Course in Hospital:

For the first 4-5 hospital days the patient had an acute nasopharyngitis, probably viral, with high fever. Several of the described attacks were observed in the first three days; these were preceded by an aura, usually visual and were usually of short duration. The child would stiffen, lose contact with the environment, fall back, and recover within a few seconds. After spinal tap she developed stiff back and neck, due most probably to a traumatic myelitis following the tap, which cleared up after 24 hours. The child was placed on phenobarbital and initially dilantin. The child was discharged without any attacks on 8-15-56. Four months later she is reported to still be on sedation, but has had no subsequent seizures. Her general behavior pattern improved and returned to normal.

Impression: Encephalitis, possibly after measles or German measles.

Case #18: (Reported by Drs. A. Y. Sweet and Horace L. Hodes, Mount Sinai Hospital, New York, New York.)

M.M., white, female, age 5

Present Illness:

4-13-56 - Received first inoculation of polio vaccine, Wyeth Lot No. 24701, without reaction.



4-20-56 - Patient developed mumps, with illness of moderate severity. Brother had had mumps on 3-30-56.

5-11-56 - Received second polio vaccine inoculation, Pitman-Moore 175A073.

5-30-56 - Noted to be dragging her feet and falling without apparent cause.

5-31-56 - Profound weakness in legs, unable to stand or walk, some weakness in other extremities.

6-1-56 - Difficulty swallowing, increased weakness in upper and lower extremities, speech slurred. No headache, pain, photophobia or dizziness.

Past History:

Allergic child, treatments in past for asthma and hay fever.

Physical Examination: T 100, BP normal, R 24, P 152.

Neurologic - some pharyngeal pooling, voice somewhat slurred and nasal in quality. Palatal movements normal, no other involvement of cranial nerves evident, reflexes normal. There was flaccid quadriplegia, more severe in the arms than in the legs, but in all extremities greater severity of paralysis proximally than distally.

Laboratory Data: First LP - pressure 130 mm., 3 RBC, 0 WBC, protein 22 mgm %, culture negative. Second LP - 4 WBC, (3 lymphs and 1 poly), protein 50 mgm %. Fluid from the second LP formed a ? pedicle, smear of which revealed acid-fast organisms. Blood, (at time of second LP) - WBC 30,400, 90% polys. Tracheal aspiration also revealed acid-fast organisms. Guinea pig inoculation of CSF and tracheal aspirate ?negative. Tuberculin test negative.

Hospital Course:

Patient continued to get worse with diminishing gag reflex, increased difficulty in handling secretions, dysarthria, bilateral facial paralysis, and increased respiratory difficulty requiring tracheotomy and use of tank respirator. Course complicated by bilateral pneumonia, ?aspiration. Patient's condition became critical. After two precarious weeks, slow gradual improvement in muscle function of all extremities began in an ascending manner. Improvement in swallowing and clearing of bilateral facial paralysis occurred at a rapid rate, and respiratory function improved. At the time of discharge on 9-21-56, some residual impairment of diaphragm function accounted for a decreased vital capacity of 770 cc's (minimum normal for her age 1000 cc's), and mild extremity weakness persisted.

Additional Laboratory Data:

CSF was initially non-cytopathogenic to tissue-culture. The fluid produced paralysis in suckling mice after serial passage, and proved to be cytopathogenic after such mice passage.

Impression:

Encephalomyelitis ?etiology (?post-infectious, ?coxsackie, ?polio vaccine reaction).

Case #19: (Reported by Dr. James T. Stephens, Oberlin, Ohio)

J.E.B., white female, age 2½

Present Illness:

5-24-56 - first polio vaccine injection into left deltoid,

Parke, Davis Lot No. 029843C.

6-7-56 - Onset of mild weakness in both legs with some pain.

Only additional history was brief, mild diarrhea about five days previously. The leg weakness rapidly progressed such that when seen by orthopedic consultant two days later, the child exhibited practically complete flaccid paralysis of both lower extremities.

6-9-56 - Admitted to Cleveland City Hospital.

Past History:

Birth and neonatal period normal. Three DPT immunizations in babyhood. Bilateral club feet treated with casts.

Physical Examination:

Temperature 102°. Slight nuchal rigidity was present for three days. Marked flaccid paralysis of lower extremities was present, zero-to-trace by PT standards. There was no muscle pain on pressure or passive stretch. Lower extremity deep tendon reflexes and abdominal reflexes were absent. Inter-costal and upper extremity muscle power was normal as were deep tendon reflexes in the arms.

Laboratory Data:

6-9-56 - CSF clear, 4 WBC, (all mononuclear), protein 40, culture negative. Blood-HGB 13, WBC 10,500 (71 P, 19 L, 5 M, and 5 E). Urine-negative.

6-21-56 - CSF clear, 0 WBC, protein 100.

Hospital Course:

Muscle weakness continued, equal in both legs, with little change for the full 37 days of hospital admission. Some improvement noted by 12-6-56, at which time the child was able to walk with braces.

Second polio vaccine injection was given 12-5-56 (Pitman-Moore 175B085) without after-effects.

Impression: Guillain-Barre syndrome.

Case #20: (Reported by Dr. Peter Stern, Medical Advisor, American Embassy, and University Childrens' Clinic, Bonn, Germany)

C.M., male, age 2, (preliminary report)

1-10-57 - third polio immunization administered.

1-30-57 - onset of polio-like symptoms. With the development of a symmetrical, ascending, flaccid paralysis and a sharp rise in cerebrospinal fluid albumin content two weeks after the first spinal puncture, the University Childrens' Clinic made a diagnosis of Guillain-Barre Syndrome. The paralysis is now in regression.

Case #21: (Reported by Dr. H. Kleinman, State Department of Health, Minneapolis, Minnesota)

D.S., male, age 36

2-2-57 - given first dose of vaccine, Lilly Lot No. 683460, in the left arm. Five or six hours later the right side of the face and right eye felt "funny".

2-25-57 - seen by physician, at which time an atypical Bell's palsy was present. The condition is improving under cortisone therapy.

Case #22: (Reported by Dr. Esther Friedenthal, Flushing, New York)

female, age 13

Two weeks following the patient's first polio vaccine injection, given into the left deltoid, the patient developed pain and weakness of the right arm. Although there were no other associated symptoms nor any objective neurological signs, the right arm weakness has persisted for two months.

Case #23: (Reported by Dr. H. D. Riley, Vanderbilt University, Nashville, Tennessee)

JRS, white, male, age 13

Present Illness:

2-9-56 - patient given first polio vaccine inoculation. Six hours later temperature rose to 104 and remained 105 and 106 for the next 48 hours, treated with aspirin, ice water sponges and enemas. Patient then developed a clonic-convulsion lasting 3-5 minutes during which there was no incontinence and five minutes after which he woke up with no memory of the convulsion. At this time he was seen in a hospital emergency room where temp. of 102 but no other significant findings were noted.

Over the next three days - temperature rose back to 105 daily with drowsiness, weakness, dizziness, pain in the back and neck.

For the next five days - temperature remained approximately 102 and thereafter gradually fell to normal. Asymptomatic since then except for two nightmares, each occurring about 1 hour after going to sleep and each characterized by glassy stare, jabbering, talking to his mother, frequently mentioning "a ball of fire". There is no incontinence and no memory of the nightmare.

Family and Past History:

Tuberculosis in the grandparent and two uncles. Allergy in mother and maternal grandmother. Patient's early feeding history reveals spells of "turning blue around the mouth". Perioral cyanosis during feedings as a baby. Always has been slightly short of breath. Frequent mild frontal headaches for the past few years, has been moderately nervous all of his life, and had a facial tick three years ago that was worse when playing hard.

Physical Examination:

Within normal limits on admission to Vanderbilt University Hospital 2-27-56.

Laboratory Data:

Lumbar puncture within normal limits. EEG probably within normal limits. Normal muscle evaluation. Other data normal except for a 2-plus histo skin test, OT and Schick negative. Skull X-Rays normal. Blood polio neutralization tests on 2-22-56 revealed a titer of 1:128 to all three types.

Discharge Diagnosis: Acute brain syndrome of unknown etiology.

# ALLERGIC REACTIONS

Data obtained during the 1954 Field Trials concerning general allergic reactions in both the placebo and vaccinated groups was also summarized in PSU Report No. 102, December 14, 1956. This PSU Report further outlined a study by Siegel (Siegel, S: The Penicillin Content of Poliomyelitis Vaccine (Salk) and its Administration to Allergic Patients, American Journal of Public Health, 45: 791-2 (June) 1955.) on which vaccine was administered to Penicillin-sensitive individuals without untoward reaction.

Instances of allergic and general reactions following vaccination that were listed in PSU Report No. 102 are summarized below. Five additional subsequently reported cases are added.

## POSSIBLE ALLERGIC REACTIONS TO POLIO VACCINE

Case No.	Age	Polio Vaccine Inoculation No.	Interval to Onset of Illness	Illness and Duration
1	5	1	?Same Day	Watery eyes, scratchy throat, cough,perfuse nasal discharge.
		2	?Same Day	Similar illness
		3	?Same Day	Asthma
2	6	1	?Same Day	High fever, 1 day
		2	6 days	Generalized urticaria, fever 103° F., severe joint pains, stomachache, occipital headache, 6 days.
3	Adult	1	5 minutes	Burning eyes generalized. Urticaria, erythema of the face, edema of the buccal mucous membranes, one hour.
4	4	1	6 hours	Itching, urticaria, 24 hours.
5	2	1	24 hours	Generalized urticaria.
		2	(Admin. with copyronil after negative intra-dermal test with 1:10 dilution)	None
6	7 cases of reaction to Wyeth Lot 24401.		All within 1 to 3 days	localized erythema and tenderness in four cases. Slight fever, listlessness anorexia and localized reaction at site of inoculation in three cases. All 7 cases subsided within 2 to 7 days.



Case No.	Age	Polio Vaccine Inoculation No.	Interval to Onset of Illness	Illness and Duration
7	5	1	2 days	"White pimple" at site of inoculation, fever, malaise.
		2	2 days	Scattered asymptomatic vesicular and crusted lesions, erythema multiforme, still persisting several weeks later.
8	9	1	7-10 days	Fever, joint pain, mild exfoliative dermatitis cleared.
		2 (0.1 cc intra-dermal)	5 days	Generalized exfoliative dermatitis, persisted.
9	7	1	2 days	Fever 104 F. for 6 days. Headache, sore neck and legs for 10 days
		2	2 days	Similar illness, one week.

Case #10: (Reported by Dr. H. D. Riley, Vanderbilt University, Nashville, Tennessee)

R.G., white, male, age 7½

Six days after administration of second polio vaccine injection, the patient experienced onset of rash, edema of ankles, fever as high as 104°, with rash spreading to involve the entire body. There was no response to epinephrine and antihistaminic treatment. Eleven days after the injection, patient seen by Dr. Riley at which time the examination was negative except for temperature of 103.6 and an urticarial-like rash involving virtually the entire body, periorbital edema, and slight swelling of the knees and ankles. Nine days later (20 days following inoculation) patient was afebrile, but there was little change in the rash.

Negative history regarding other allergic manifestations. Mother stated to be strongly allergic. Not known whether patient had previously received penicillin or streptomycin parenterally, but penicillin topical ointment used in 1948.

Case #11: (Reported by Dr. H. D. Riley, Vanderbilt University, Nashville, Tennessee)

H.C., age 4½

Patient received first injection of polio vaccine, Lilly, in his right arm on 11-17-55. Between 1 and 3 hours later he developed a rather severe diffuse urticarial reaction with periorbital edema. This subsided somewhat on antihistaminics, but the following day there was some recurrence of lesser severity. He has not received subsequent inoculation of vaccine.



Case #12: (Reported by Dr. H. D. Riley, Vanderbilt University, Nashville, Tennessee)

NH, White, female, age 26

Approximately three hours following polio vaccination the patient developed urticaria and pain beginning at the site of inoculation. The urticaria became generalized. However the reaction was not of severe degree and was fairly well controlled with antihistaminics.

Case #13: (Reported by Dr. James H. McDonough, Rome Cable Corporation, Rome, New York)

37 year old white female.

Five hours following her first injection of polio vaccine - the patient developed itching of the thighs which spread to arms, face and trunk during the night. The next morning she noted a rash on her forehead, persistence of itching of arms and legs, and a rather marked edema of her eyelids. When seen at 10:00 AM a blotchy dark red eruption on forehead and cheeks was noted. There was also moderate periorbital edema, apparently less than early that AM. Only faint redness was apparent on the flexor surface of the forearms and medial aspect of the thighs. On Chlortrimeton and Butisol Sodium therapy the patient's symptoms regressed and she had returned to normal by noon the following day.

Past medical history was entirely negative regarding any allergic manifestations or reactions to drugs, foods, etc. including penicillin.

Case #14: (Reported by Dr. Robert M. Albrecht, Department of Health, State of New York, Albany, New York)

female, age 40

Approximately one hour following first injection with Lilly vaccine the patient developed a burning blotchy red rash on her legs approximately up to knee level. About three hours following the injection she developed nausea. A blotchy red rash which did not fade on pressure was present the next morning.

The patient has no history of allergy, and had previously received injections of penicillin without reaction.

#### HEMATOLOGIC DISEASE

The question of hematologic reaction to polio vaccine was discussed in some detail in PSU Report No. 102, particularly regarding studies of the possibilities of sensitizing Rh negative individuals or of producing hemolytic reactions in previously sensitized individuals.

The only case reported to PSU of hematologic illness occurring in association with polio vaccination was reviewed in detail in Report No. 102.

### RENAL DISEASE

The problem of possible reactions to the minute quantities of residual monkey kidney protein in the vaccine was discussed in PSU Report No. 102. Data from the 1954 Field Trial Summary Report were briefly reviewed, including kidney disease occurring in vaccinated and placebo groups, and specific detailed studies in vaccinated individuals of renal function and possible development of antibody to monkey kidney protein.

A case of generalized "collagen" disease with onset four weeks after vaccination has since been reported to PSU in which nephropathy and "renal" hypertension have not responded to steroid therapy.

### RENAL REACTIONS

Case #1: (Reported by Dr. David Platt, Wilmington, Delaware)

B.E., age 18

5-17-56 - patient given first inoculation of polio vaccine

6-15-56 - first onset of a recurrent mottled rash on patient's palms. Patient's illness then progressed to malaise, severe muscle pains in arms and legs, intermittent fever, hypertension (previously normal-no hypen-tensive), and prolonged generalized weakness.

7-5 to 18-56 - admitted to Memorial Hospital, Wilmington, Delaware.

Repeated blood preparations for lupus were negative. Skin-subcutaneous-muscle biopsy from the deltoid region was negative for periarteritis nodosa. Urinalysis repeatedly showed a few RBC's, an occassional cast, and 2 or 3 plus albumin, BUN was 20. The patient's clinical condition deteriorated until July 15 when he was started on cortisone. He then began a dramatic improvement and was discharged July 18, 1956. Blood pressures while in hospital varied from 170/110 to 210/150.

7-18 to 10-26-56 - As an out-patient, continued on cortisone initially 200 mgs per day, gradually decreasing starting July 29, 1956, until cortisone was discontinued on 10-26-56.

Patient now asymptomatic except that blood pressure has persisted at about 160/120 and urine has persistently shown 1-plus albumin with an occassional RBC.

Physician's Impression: Possible collagen disease.

### III. Triply-Vaccinated Polio Cases

Poliomyelitis occurring in individuals who had received three inoculations of vaccine prior to onset of illness may be classified as follows according to reports received through March 28, 1957.

#### TRIPLY VACCINATED POLIO CASES

Non-Paralytic	176
Paralytic, Listed in Table 2	28
Possible Paralytic Polio (Investigation Incomplete)	4
Revoked (see below)	6

All paralytic cases for which the State Polio Reporting Officer indicates the diagnosis has been sufficiently documented are included in Table 2. Convalescent muscle grading or clinical description as to convalescent status has been requested for all paralytic cases. Such follow-up information has resulted in a change from paralytic to non-paralytic classification of four cases, a changed diagnosis in one case, and an unvaccinated rather than three-inoculation vaccination history in one case; thus six cases originally listed are no longer included. Sufficient data to establish the diagnosis of paralytic polio have not yet been received on four cases. The cases thus listed in Table 2 have received more thorough evaluation than the routine polio case and therefore should not directly be compared with other groups of paralytic cases, vaccinated or unvaccinated.

Laboratory studies have been reported on 20 of the 28 cases listed in Table 2, with results as follows:

Poliovirus isolated from stool	8
Poliovirus isolated from patient's family but not from patient	1
Four-fold rise in neutralizing antibody titer; (stool negative)	1
Clinical Diagnosis confirmed by post- mortem CNS histopathology	1
Stool negative for virus	7
Non-polio virus isolated from stool	2

The paralytic cases are listed in Table 3 according to intervals between inoculations and between last inoculation and onset of illness. It may be seen that there was an interval of over 3 months between first and second inoculations in seven cases, and also that the interval between second and third inoculations was three months or less in seven cases. The onset of illness in six cases was less than two weeks following last vaccine inoculation.

Table 2 of this report will constitute the last detailed PSU Report listing of 1956 three inoculation cases. This listing in future reports will include only cases with onset in 1957; a summary of 1956 cases will be included.

#### IV. Routine Poliomyelitis

##### A. 1956 CHICAGO-COOK COUNTY CASES

Not previously listed in the 1956 routine PSU Summaries are a total of 325 Chicago-Cook County poliomyelitis cases occurring within 30 days of a vaccination, including 222 paralytic and 103 nonparalytic. Table 4 shows these cases by interval from inoculation to onset of symptoms; the paralytic cases are further tabulated by site of last inoculation and site of first paralysis. Of the 222 paralytic cases, there were 190 whose first paralysis was spinal or bulbo-spinal. Of these 190, the data on site of inoculation were available for 175; for these cases 12 developed first paralysis in the inoculated limb only, while 9 developed first paralysis in the uninoculated limb only.

In the group of 43 cases with initial involvement of the inoculated and/or opposite limb, there was no concentration of cases within the 4-11 day period following inoculation; the 1955 Cutter cases, on the other hand, showed a definite grouping within the 4-11 day period following inoculation.

With this PSU Report #108, these 325 Chicago-Cook County cases not previously tabulated are included in the 1956 under-30-day case totals, as shown in Table 5.

##### B. NATIONAL TOTAL 1956 AND REPORTED 1957 CASES

During the period March 14-27, a total of three new under-30-day cases was reported, all paralytic. Of these three paralytic cases, one followed inoculation with an unknown lot of Lilly vaccine and one followed inoculation with a vaccine for which both manufacturer and lot number are unknown. The third case was in association with Pitman-Moore vaccine, a lot for which fewer than one case per 100,000 doses of distributed vaccine have been reported. These new cases are presented in Table 5, together with the total cases vaccinated in 1956 or 1957 with onsets within 30 days of an inoculation. In addition to these cases, Table 5 includes the 1956 Chicago-Cook County cases not previously listed in PSU reports.

Also included in this table are estimates of the percent of total vaccine shipped by each manufacturer through December, 1956, excluding Cutter shipments. It should be noted that the data on distribution of vaccine by manufacturer includes 1955 and 1956 shipments, but the polio cases listed are 1956 cases only.

#### V. Vaccine Distribution

A summary of current and cumulative shipments of vaccine (in 1,000's of cc's of net bottled vaccine) appears in Table 6. Excluding export, over six million cc's were shipped during the first two weeks of March. As of March 15, all of the vaccine cleared had been committed, but some remained to be shipped.



The Poliomyelitis Vaccine Activity, Division of General Health Services, BSS, PHS, has prepared the following rough estimates of domestic usage of vaccine through March 15, 1957. All figures are shown in millions.

Age Group	Total Inoculations	Persons who have received				U.S. Population
		1 Inoculation	2 Inoculations	3 Inoculations	1 or More Inoculations	
0-19	95	9	25	12	46	62
20-39	14	7	2	1	10	46
40 plus						59
Total	109	16	27	13	56	167

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

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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:			
	2-16	2-23	3-2	3-9	3-16	3-23		1956	1955	1954	1953
UNITED STATES	45	34	37	30	34	35	215	397	384	576	484
NORTH EAST	2	1	3	3	2	-	11	33	44	66	40
Maine	-	-	-	-	-	-	-	2	-	-	-
New Hampshire	-	-	-	-	-	-	-	-	2	-	-
Vermont	-	-	-	-	-	-	-	3	-	-	-
Massachusetts	-	-	-	1	-	-	1	3	2	9	5
Rhode Island	-	-	-	-	-	-	-	-	-	2	-
Connecticut	-	-	-	-	-	-	-	-	1	5	3
New York	2	-	1	2	-	-	5	17	23	32	22
New Jersey	-	1	-	-	-	-	1	5	4	4	-
Pennsylvania	-	-	2	-	2	-	4	3	12	14	10
NORTH CENTRAL	11	6	15	2	6	9	49	48	71	107	102
Ohio	-	-	1	-	-	-	1	7	12	20	20
Indiana	-	2	4	-	1	3	10	5	7	7	13
Illinois	-	2	-	-	-	-	2	6	6	14	11
Michigan	3	1	1	1	2	-	8	5	10	18	18
Wisconsin	1	-	2	-	-	1	4	2	2	8	7
Minnesota	-	-	-	-	1	-	1	5	6	13	6
Iowa	-	-	-	-	-	-	-	3	2	7	3
Missouri	5	-	-	-	1	2	8	6	2	2	5
North Dakota	-	-	-	-	-	-	-	1	-	2	1
South Dakota	-	-	2	-	-	-	2	2	8	5	9
Nebraska	2	1	2	1	1	2	9	2	8	5	5
Kansas	-	-	3	-	-	1	4	4	8	6	4
NORTH WEST	2	1	2	-	2	2	9	16	22	36	24
Montana	1	-	-	-	-	-	1	-	1	16	4
Wyoming	-	-	1	-	-	-	1	1	3	1	5
Idaho	-	1	-	-	-	-	1	2	5	4	4
Washington	-	-	-	-	-	-	-	6	4	6	6
Oregon	1	-	1	-	2	2	6	7	9	9	5

\* National Office of Vital Statistics

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Table 1 (Continued)

State and Region	Cases Reported to NOVS* for Week Ending:						Six Week Total	Comparable Six Week Totals in:			
	2-16	2-23	3-2	3-9	3-16	3-23		1956	1955	1954	1953
SOUTH EAST	14	4	2	2	10	4	36	48	80	93	66
Delaware	-	-	-	-	-	1	1	-	1	-	-
Maryland	-	-	-	-	-	-	-	-	1	1	1
D. C.	-	-	-	-	-	-	-	-	-	-	-
Virginia	1	-	-	-	1	-	2	2	3	8	2
West Virginia	-	-	-	1	-	-	1	2	1	6	8
North Carolina	2	-	-	1	1	-	4	3	8	7	10
South Carolina	5	-	1	-	-	2	8	3	2	3	1
Georgia	1	1	-	-	2	-	4	6	4	8	13
Florida	4	3	-	-	4	-	11	21	44	42	20
Kentucky	-	-	-	-	-	-	-	5	7	6	6
Tennessee	1	-	-	-	2	-	3	6	5	4	4
Alabama	-	-	1	-	-	1	2	-	4	8	1
SOUTH CENTRAL	9	9	9	14	8	10	59	105	77	122	65
Mississippi	1	1	1	2	-	1	6	7	7	6	7
Arkansas	1	-	-	-	1	-	2	3	4	11	8
Louisiana	1	-	2	4	2	2	11	12	17	12	17
Oklahoma	1	1	1	1	-	1	5	3	4	12	13
Texas	5	7	5	7	5	6	35	80	45	81	30
SOUTH WEST	7	13	6	9	6	10	51	147	90	152	187
Colorado	-	-	-	-	1	-	1	4	5	5	14
New Mexico	-	-	-	-	-	-	-	2	1	3	-
Arizona	-	3	2	1	-	3	9	11	2	7	12
Utah	-	1	-	1	1	1	4	-	5	3	5
Nevada	-	-	-	-	-	-	-	-	1	-	4
California	7	9	4	7	4	6	37	130	76	134	162
TERRITORIES	-	-	-	-	-	-	-	-	-	-	-
Alaska	-	-	-	-	-	-	-	-	3	9	1
Hawaii	1	-	-	-	-	-	1	12	3	41	3
Puerto Rico	-	-	-	-	-	-	-	1	126	7	5

\* National Office of Vital Statistics

# CURRENT U.S. POLIO INCIDENCE COMPARED WITH YEARS 1952-1956

DATA PROVIDED BY NATIONAL OFFICE OF VITAL STATISTICS

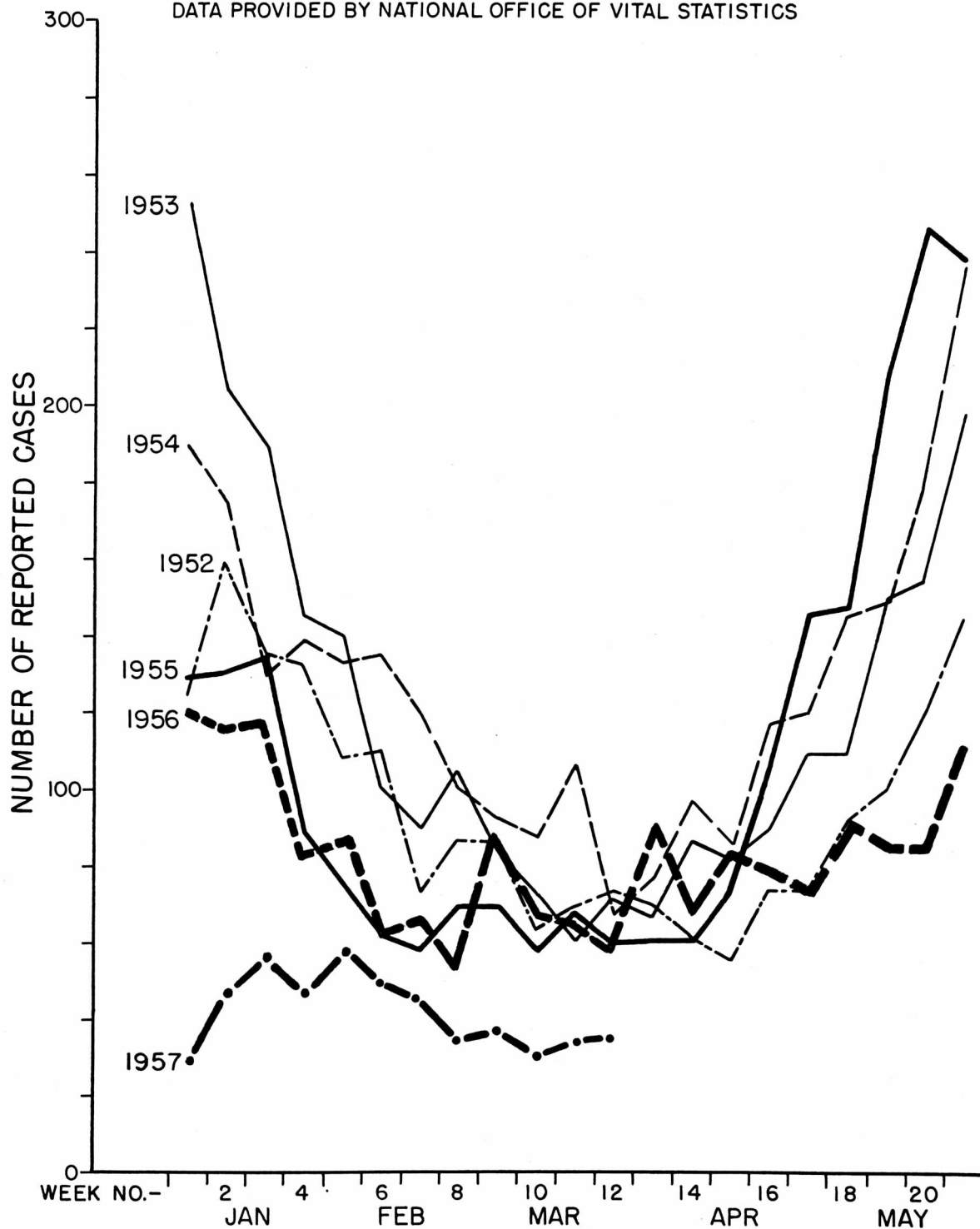




Table 2

## Paralytic Poliomyelitis Following Three Inoculations

(Reports through March 28, 1957)

3V Case No.	State	County	Ini- tials	Age	Sex	Dates of Inoc.	Date 1st Symp.	Site of Para.	Mfr. Lot No.
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3V-1 DROPPED.

Comment: Three stool specimens, complement fixation and neutralization tests were negative for polio. Influenza titers have shown a four-fold rise. Muscle evaluation on 6-6-56 (3½ months after onset) showed no residual paralysis.

3V-2	Conn.	Hartford	NC	10	F	5-5-54	8-26-56	LA, RA, PD	1-507
						5-12-54		LL, RL, PD	1-507
						6-9-54		Trunk PD	1-507

Comment: Onset of weakness in RL on 8-29, hospitalized on 9-9, with eventual quadriplegia and trunk weakness. CSF on 9-9 showed 20 cells, 89 mgm protein. Type I poliovirus isolated by Virus Laboratory, Section of Preventive Medicine, Yale University Medical School. Muscle grading on 10-9-56 (45 days after onset) showed involvement of trunk and all extremities, with a score of 172 (470 highest possible score). Field Trial Lot 507 was evaluated as producing poor antibody response.

3V-3	Ga.	Bibb	EJB	4	F	11-5-55	7-27-56	RL	? ?
						12-2-55			? ?
						7-3-56		L	663617

Comment: Coxsackie B-4 virus was isolated from a stool specimen by CDC Virus & Rickettsia Laboratory, Montgomery, Alabama. No poliovirus was present. Convalescent care given at Georgia Warm Springs Foundation for extensive residual paresis of the right lower extremity.

3V-4	Me.	Aroostook	DTW	4	M	12-2-55	1-10-56	LL	W 24009
						12-10-55			W 24009
						12-29-55			W 24009

Comment: CSF revealed: cells 0, protein 12 mgm. Muscle grading established paresis of the left leg. Orthopedic consultant noted on August 16, 1956 that there remained slight residual left leg paresis.

3V-5	Md.	Washington	CLS	4	F	9-7-55	9-23-56	LA	W 24012
						9-28-55			W 24012
						4-27-56			W 24702

Comment: Two or three days prior to onset the patient received a DPT injection in left triceps. CSF showed 33 cells, 15 mgm protein. Mild residual weakness in the left arm. Type I poliovirus isolated from the stool by CDC Virus and Rickettsia Laboratory, Montgomery.



Table 2 (Continued)

3V Case No.	State	County	Ini- tials	Age	Sex	Dates of Inoc.	Date 1st Symp.	Site of Para.	Mfr.	Lot No.
3V-6	Md.	Washington	PSD	8	F	4-?-55 2-?-56 ?8-9-56	9-9-56	RL,LL	W	236
									PM	?
									PM	?

Comment: CSF showed 338 cells, 30 mgm protein. Muscle grading 2 months after onset revealed: Rt.lower leg-very poor; RT.hip-poor; left lower leg-poor; left hip-poor; abdominals-poor; back-fair; cranials and upper extremities-normal. Type I virus isolated from 3 stool specimens by CDC Virus & Rickettsia Laboratory, Montgomery.

3V-7	Michigan	Lenawee	PD	12	M	11-5-55 3-17-56 9-3-56	9-13-56	?	?	?
									?	?
									L	676312

Comment: Type I poliovirus isolated from stool by Dr. Gordan Brown, University of Michigan.

3V-8	New York	Manhattan	SM	11	F	12-?-55 12-?-55 4-?-56	6-25-56	RA,LA RL,LL Trunk	L	657200
									L	657200
									L	657200

Comment: CSF showed 65 cells, 212 mgm protein. Developed intercostal and diaphragmatic involvement, requiring tracheotomy and respirator. A muscle evaluation done on 9-29-56 showed no bulbar involvement, mild involvement of the arms and severe involvement of the trunk and legs, with a score of 135 (29%). Type I poliovirus was isolated from the stool by Dr. Ward (N.Y. City Health Department Laboratory).

3V-9	N.Y.	Brooklyn	SJ	9	F	5-19-55 9-27-55 12-?-55	4-28-56	LA,RA LL,RL Trunk	PD	029129
									L	?649348
									L	657200

Comment: Onset of paralysis on 4-29. Meningeal signs were minimal. Three CSF examinations were done; 5-1; cells 7, protein 32 mgm; 5-4, cells 5; 5-15, cells 9. Two stools were negative for virus in Dr. Ward's Laboratory, NY City Health Department. Paralysis progressed to involve all extremities without bulbar signs. Muscle evaluation on 5-15-56 showed severe involvement of all extremities and trunk, with an approximate score of 276 (59%).

3V-10	Ohio	Cuyahoga	JD	8	M	5-?-55 10-?-55 ?7-15-56	8-27-56	LL,RL	W	23704
									PM	175-044
									L	663619

Comment: CSF showed 122 cells (75% monocytes) and 70 mgm protein. Moderate residual paralysis of both legs on 10-30-56. Poliovirus Type I has been isolated from the stool by Dr. Frederick Robbins, Cleveland City Hospital.

Table 2 (Continued)

3V Case No.	State	County	Ini- tials	Age	Sex	Dates of Inoc.	Date 1st Symp.	Site of Para.	Mfr.Lot No.
3V-11	Wash.	Kitsap	MLB	11	F	4-27-54 5-4-54 6-1-54	9-14-56	Bulbar	PD 10361-BA PD 10361-BA PD 10361-BA

Comment: CSF showed 84 cells (84% lymphocytes), protein 97 mgm. Patient had mild bulbar polio with involvement of cranial nerves IX and X (difficulty swallowing regurgitation through nose and nasal voice). One stool specimen examined by The Washington State Health Department Laboratory was negative. Muscle grading on 11-28-56 showed mild residual weakness of right arm and left leg. Field Trial Lot 503 (PD 10361-BA) was evaluated as producing poor response.

3V-12	Puerto Rico	Arecibo	CMR	2	M	11-16-55 12-16-55 6-13-56	7-8-56	RL,LL, L Trunk L	658251 658251 PD 029860
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Comment: No CSF examination done. Stool specimen collected 7-12 was negative for virus. Blood was obtained on 7-14 and 7-26 and both specimens showed following neutralizing antibody titers: Type I: 32, Type II: 32, Type III: 16. Mild residual paresis of leg was present early in convalescence but with no weakness demonstrable at muscle grading 6 months after onset.

## 3V-13 DROPPED

Comment: This fatal case was originally reported by her parents to have received three inoculations. On further investigation the family admitted misrepresentation of the facts, and it was determined that this patient had never been vaccinated.

3V-14	Indiana	Lake	JBP	5	M	3-?-56 3-26-56 6-8-56	9-13-56	Bulbar ? ? ? ? ? ?	
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Comment: Died on 7-14-56. Illness began on 7-13 with fever. On 7-14 when the attending physician (who is also the local health officer) was first called to see the patient, he found the child in extremis, and ordered immediate hospitalization. The patient expired within 30 minutes of admission. Although the physician's impression was bulbar polio, the diagnosis appeared uncertain, and an autopsy was performed by the coroner, who returned a diagnosis of poliomyelitis. Since the calvaria was not opened, the central nervous system was not examined. This case will continue to be carried as bulbar polio, although, in the absence of neuropathologic or virologic studies, it is impossible to definitively confirm this diagnosis.

## 3V-15 DROPPED

Comment: No residual paresis on convalescent muscle grading.

Table 2 (Continued)

3V Case No.	State	County	Ini- tials	Age	Sex	Dates of Inoc.	Date 1st Symp.	Site of Para.	Mfr.	Lot No.
3V-16	Kansas	Johnson	VZ	9	M	5-6-54 5-13-54 6-10-54 10-20-55	8-20-56	Bulbar	PD	507 507 507 175009

Comment: Onset of bulbar symptoms on 8-23-56, with respiratory irregularity and involvement of Nerves IX, X, and XII. Discharged 9-5, with mild bulbar involvement. No spinal fluid examination was done. Type I poliovirus was isolated from the stool by the Virus Laboratory, Kansas City Field Station, CDC, USPHS.

3V-17 DROPPED

Comment: Muscle spasm during acute phase caused apparent weakness, which disappeared during convalescence.

3V-18 DROPPED

Comment: Examination by an orthopedic specialist on 12-21-56 (2 months after onset) revealed complete functional recovery of all muscle groups.

3V-19	Alabama	Walker	JGU	8	M	4-18-55 6-24-55 5-12-56	9-2-56	Bulbo- Spinal	? ? L	? ? 671700
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Comment: A stool specimen from this patient is now on test at the CDC Virus and Rickettsia Laboratory, Montgomery. Paralysis involved neck, arms, legs (mild) and palate.

3V-20	Wisconsin	Dana	NR	5	M	10-25-55 11-25-55 8-3-56	8-9-56	LL	L L L	649344 649344 ?
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Comment: The CSF showed 2 cells and a normal protein. Minor weakness of hamstrings on left developed and was confirmed by orthopedic consultant. Re-examination after acute illness revealed minor weakness still present in hamstrings. A stool specimen was negative for poliovirus and a blood taken on 8-16 showed following titers: Types 1 and 2: 1 to 128; Type 3: 1 to 8.

3V-21	N. Dakota	LaMoure	DC	14	M	12-31-55 2-11-56 8-18-56	9-18-56	LL, RL	PM PM PM	175049 175049 175073
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Comment: Paresis of the legs was first noted on 9-30, CSF revealed 141 cells, (86% lymphocytes), and a protein of 74 mgm%. Muscle evaluation on 10-30 (42 days) revealed residual involvement of both legs, with extensors of knee rated good bilaterally, flexors of the knee rated good on the right, and plantar flexors of the ankle rated good bilaterally. All other muscle groups normal. It is noteworthy that six other children in family had illnesses clinically resembling nonparalytic polio. Stool specimens were taken on all family members with illness. Specimens were negative in 5 cases, and on two cases yielded a non-polio virus.

Table 2 (Continued)

3V Case No.	State	County	Ini- tials	Age	Sex	Dates of Inoc.	Date 1st Symp.	Site of Para.	Mfr.	Lot No.
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3V-22 DROPPED.

Comment: This patient had an acute CNS illness clinically compatible with acute poliomyelitis. He was placed in a respirator following development of severe bulbospinal involvement, but died of massive pulmonary atelectasis on autopsy, gross and microscopic examination of the CNS was thought to indicate poliomyelitis, although the extent of necrosis and liquefaction was considered unusual. Histopathological review of CNS slides was reported by Dr. David Bodian, Johns Hopkins University, as showing: a) necrotizing arteritis with extensive softening of the grey matter, and b) patches of primary demyelination of the white matter. After further consideration the diagnosis was changed to acute disseminated encephalo-myelitis.

3V-23	W.Va.	Raleigh	JEP	13	M	10-17-55	7-15-56	RL	L	649344
						11-1-55			L	649344
						5-7-56			L	658259

Comment: CSF showed 98 cells (80% lymphocytes), protein 36 mgm %, Weakness of both hips on hospitalization. Discharged on 11-9-56 at which time muscle examination revealed residual paralysis in right leg. Fitted with a short leg brace on the right.

3V-24	Nebraska	Gosper	PD	12	F	4-29-55	10-28-56	RL	?	?
						8-6-55			L	653807
						5-12-56			PM	175072

Comment: Onset of weakness in right quadriceps on 10-31. CSF revealed 6 cells (lymphocytes), protein 11 mgm %. Discharged 11-19, with slight residual weakness right leg. Stool specimen examined by Reihart Virus Laboratory, Omaha, was negative. A four-fold rise in titers to Type I was demonstrated by neutralization test.

3V-25	Nebraska	Gosper	RL	7	M	4-29-55	9-27-56	Legs & ?	?
						8-6-55		Trunk L	653807
						5-12-56		PM	175072

Comment: Weakness in legs and trunk developed on 9-27. CSF examination showed 11 lymphocytes, protein normal. By 11-20 patient had residual weakness in both legs. Stool specimen examined by Reihart Virus Laboratory, Omaha, was negative. Neutralization tests of paired serum specimens showed stable titers to all three Polio types.

3V-26	Illinois	Cook	KC	15	M	12-14-55	9-16-56	Bulbar, L	?
						2-1-56		Trunk L	?
						8-15-56		PM	?175A081

Comment: Mild illness was characterized by nasal regurgitation due to soft palate paralysis, without other systemic symptoms. Lumbar puncture was not done. 60-day muscle grading revealed persistent mild unilateral palatal paresis and a "fair" rating of the neck muscles bilaterally. The remainder of the cranial nerves and the skeletal musculature were normal.



(Table 2 (Continued))

3V Case No.	State	County	Ini- tials	Age	Sex	Dates of Inoc.	Date 1st Symp.	Site of Para.	Mfr.	Lot No.
3V-27	Missouri	St. Louis	BD	7	F	6-?-56 7-?-56 12-28-56	1-4-57	Legs	L ? L ? L 679914	

Comment: Onset of paralysis in both legs on 1-4-57. CSF contained 33 WBC, 63% lymphs. Stool and blood specimens being examined by St. Louis Public Health Laboratory, Missouri Division of Health.

3V-28	Texas	Coke	MEI	7	F	4-25-55 7-26-55 7-20-56	11-7-56	RL, LL, Trunk	L 649343 L 649331 L ?	
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Comment: CSF contained 176 WBC. Type III poliovirus has been isolated from stool specimens by the Texas State Health Department Laboratory. Muscle grading on 2-4-57 revealed fair and poor ratings of lower back and abdominals bilaterally and of the left hip and thigh, fair and Good ratings of the left lower leg, and zero to poor ratings of the entire right hip and leg.

3V-29	Calif.	Los Angeles	MH	11	F	4-25-55 3-28-56 4-4-56 5-10-56	1-10-57	Bulbo- Spinal	C ? L 658259 L 658259 L 671708	
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Comment: Onset characterized solely by nasal voice followed by nasal regurgitation, without history of fever, headache, nausea or vomiting, stiff neck or muscle pain. Examination on hospital admission revealed a rectal temp. of 100, definite left palatal paresis with revular deviation, intact superficial and deep reflexes, no diminution of muscle power and no signs of meningeal irritation. CSF exam revealed 0 cells and normal sugar and protein. On discharge, pharyngeal paresis had cleared but muscle examination revealed slight weakness of neck flexors and right shoulder. Laboratory viral studies and follow-up muscle grading will be obtained.

3V-30	Illinois	DuPage	KS	9	F	4-30-54 5-7-54 6-4-54 11-4-55	8-28-56	RL Trunk	? ? ? ? ? ? ? ?	
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Comment: CSF contained 18 WBC. A non-polio virus was isolated from the patient's stool by the Illinois State Health Department Laboratory. Muscle evaluation on 12-7-56 revealed Fair ratings of the right gastrocnemius and of the anterior and lateral-abdominal musculature bilaterally.

3V-31	Illinois	Cook	MP	4	M	12-24-55 1-20-56 8-2-56	8-2-56	LL	? ? ? ? L 676304	
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Comment: CSF contained 250 WBC, 67% lymphs and 33% polys. Stool specimen submitted to Illinois State Health Dept. Laboratory on 8-13-56 was negative. Muscle evaluation on 11-28-56 revealed a Fair rating of the left anterior tibialis, with the rest of the left leg musculature graded Good.



Table 2 (Continued)

3V Case No.	State	County	Ini- tials	Age	Sex	Dates of Inoc.	Date 1st Symp.	Site of Para.	Mfr.	Lot No.
3V-32	Calif.	Solano	RB	13	M	11-10-55 12-2-55 4-17-56	8-13-56	LL	L	649336 649336 658263

Comment: CSF contained 10 lymphs with 115 mgm% protein. Paresis in both legs during acute phase with some residual weakness only in the left foot. Two stools specimens were negative. Paired blood specimens showed low stationary neutralization titers and completely negative complement-fixation tests for polio.

3V-33	Georgia	Glynn	JAM	5	F	2-2-56 2-28-56 9-4-56	9-5-56	RL,LL	? ? ?	? ? ?
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Comment: Marked bilateral residual paresis of anterior and posterior tibial musculature bilaterally. Received convalescent care at Georgia Warm Springs Foundation.

3V-34	New Mexico		TM	6	M	12-15-55 1-17-56 9-14-56	1-19-57	Bulbar	L	653800 (Expired L 653800 1-25-57)PD 1993
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Comment: Onset with fever, sore throat, followed by stiff neck, nasal voice, pharyngeal paresis. CSF on 1-23-57 contained 294 lymphocytes. Rapid progression of involvement necessitated tracheotomy on 1-24 and respirator care on 1-25; Patient's temperature rose to 108.4° F. prior to death at 11 PM, 1-25-57; Autopsy performed by Dr. H. Beighley, with review of histopathological findings by Dr. David Bodian, revealed lesions characteristic of acute anterior polio-encephalomyelitis.

(Continued) Table 3

Table 3

Paralytic Polio in Triply-Vaccinated Individuals

Intervals between Inoculations and between last Inoculation and Onset of Illness

Interval	0 to 15 Days	16 to 30 Days	>1 to 2 Months	>2 to 3 Months	>3 to 6 Months	>6 to 12 Months	>12 Months
Between 1st & 2nd Inoculation	7	7	7	0	5	2	0
Between 2nd & 3rd Inoculation	1	5	0	1	7	14	0
Between last Inoculation** & Onset of Illness	6*	2	6	1	8	3	2
Total Cases	28						

\* Includes one case with onset same day as last inoculation.

\*\* Three cases had received four inoculations

Table 4

1956 Chicago and Suburban Cook County Cases  
Occurring within 30 Days of a Vaccination  
by Site of Last Inoculation and Site of First Paralysis

	Interval from Inoculation to Onset						Total
	0-3	4-7	8-11	12-15	16-30	?	
Total	80	79	52	33	64	7	325
Nonparalytic	22	23	18	11	25	4	103
Paralytic	68	56	34	22	39	3	222
Paralytic Cases							
Site of First Paralysis Unknown	-	1	-	-	1	-	2
Bulbar First Paralysis	9	7	7	1	6	-	30
Spinal and Bulbo-Spinal First Paralysis	59	48	27	21	32	3	190
Cases with First Paralysis Spinal							
Site of Inoculation Unknown	4	3	3	2	2	1	15
Site of Inoculation Known	55	45	24	19	30	2	175
Cases with First Paralysis Spinal and Site of Inoculation Known							
No Involvement of Inoculated and/or Opposite Limb	43	32	21	14	20	2	132
Involvement of Inoculated and/or Opposite Limb	12	13	3	5	10	-	43
Cases with First Paralysis of Inoculated and/or Opposite Uninoculated Limb							
Inoculated Limb Only (and other Sites)	2	5	2	1	2	-	12
Opposite Limb Only (and other Sites)	3	4	-	1	1	-	9
Both Limbs (and other Sites)	5	3	1	1	6	-	16*
Unknown Limb Only (and other Sites)	2	1	-	2	1	-	6**

\* Including one case having two inoculations within 30 days. There was no involvement of the limb of the first inoculation.

\*\* Including two cases with two inoculations within 30 days. Each case had an inoculation in each arm, for this reason, involvement of "inoculated" or "opposite" limb is unknown.

Table 5

Poliomyelitis Cases with Onsets within 30 Days of a Vaccination in 1956 or 1957, by Vaccine Manufacturer\*\*\* and Paralytic Status

Manufacturer Paralytic Status	L		PD		PM		W		SD		Unknown	
	P	NP	P	NP	P	NP	P	NP	P	NP	P	NP
1956 Cases Previously Reported	192*	206**	14	11	25	26	10	11	0	12	30	28
1956 Chicago- Cook County Cases Not Previously Listed	123	52	1	1	71	33	3	1	0	0	24	16
Grand Total 1956 Cases	315	258	15	12	96	59	13	12	0	12	54	44
Total 1-1-57 to 3-27-57	0	0	0	0	0	0	0	0	1	0	22	20
Percent Dis- tribution of Vaccine ****	L		PD		PM		W		SD			
	70		9		13		5		2			

\* Including one case vaccinated with part Lilly and part Wyeth Vaccine.

\*\* Including three cases associated with Lilly or Pitman-Moore and one with Lilly or Wyeth.

\*\*\* L - Lilly, PD - Parke, Davis, PM - Pitman-Moore, SD - Sharpe & Dohme, W - Wyeth, Unknown - Unknown Manufacturer.

\*\*\*\* The percent of total vaccine shipped through December, 1956, excluding Cutter vaccine. Estimates from data provided by the Poliomyelitis Vaccine Activity Division of General Health Services, BSS, PHS.

Table 6

## Poliomyelitis Vaccine Shipment Summary

(Reports from Polio Vaccine Activity, BSS, USPHS, through 3-22-57)

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					
First Ten Months	193	42,649	21,913	4,159	68,914
November	1	1,364	1,260	418	3,043
December	-	1,575	1,611	1,900	5,086
1956 Totals	194	45,588	24,784	6,477	77,043
1957					
January	2	4,705	4,243	2,111	11,061
February	3	9,934	6,100	544	16,581
March 1-15	2	3,968	2,343	1,170	7,483
Cumulative Totals	13,741	72,090	43,702	10,303	139,835
Vaccine Cleared for distribution by the National Institutes of Health but not shipped by 3-15-57; all of this vaccine has been committed					1,502

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

\*\* Less than 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.



