

CDC INFLUENZA SURVEILLANCE REPORT

NO. 31

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SPECIAL NOTE

Information contained in this report is a summary of data reported to CDC by State Health Departments, Epidemic Intelligence Service Officers, collaborating influenza diagnostic laboratories, and other pertinent sources. Much of it is preliminary in nature and is intended for those involved in influenza control activities. Anyone desiring to quote this information is urged to contact the person or persons primarily responsible for the items reported in order that the exact interpretation of the report and the current status of the investigation be obtained. State Health Officers, of course, will judge the advisability of releasing any information from their own states.

Table of Contents

- I. Summary of Information
- II. Current Analysis of Influenza and Pneumonia Mortality
- III. National Health Survey Data
- IV. Industrial Absentee Data
- V. Influenza Vaccine Production and Distribution
- VI. Influenza Associated with Encephalitis

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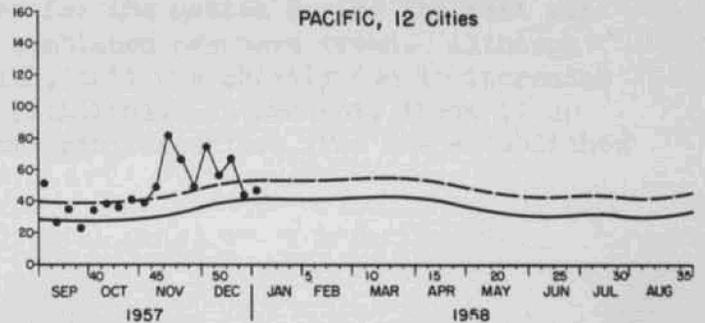
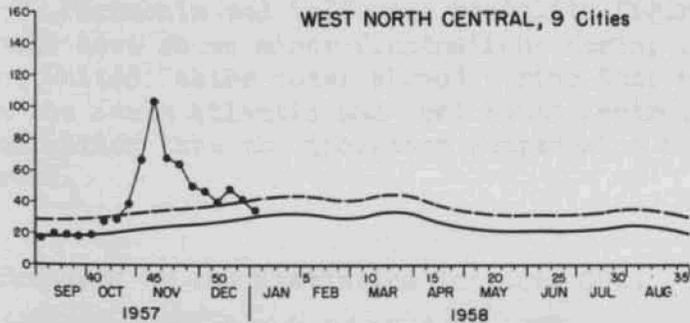
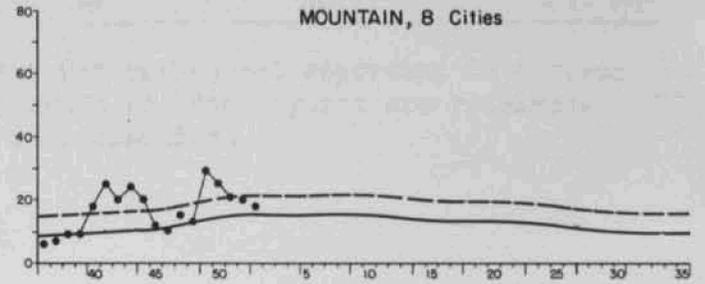
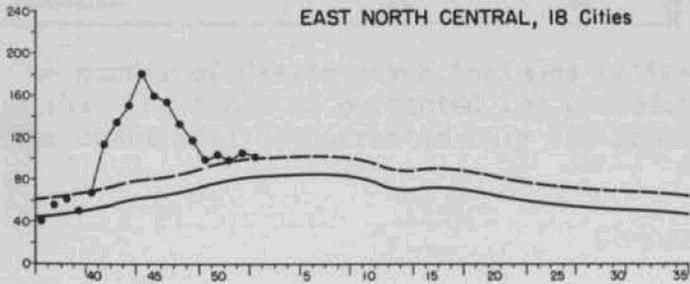
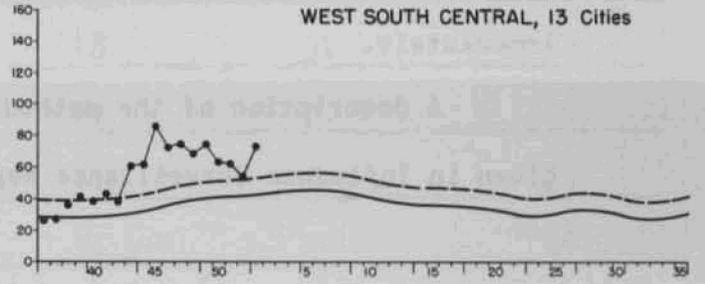
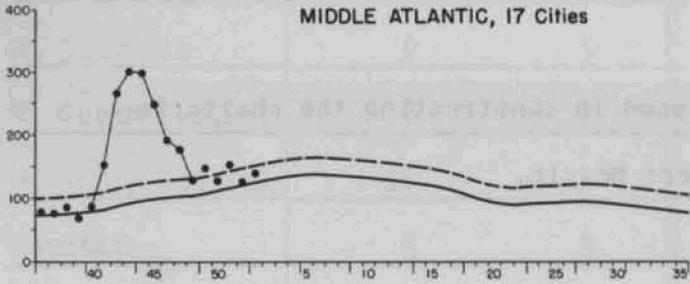
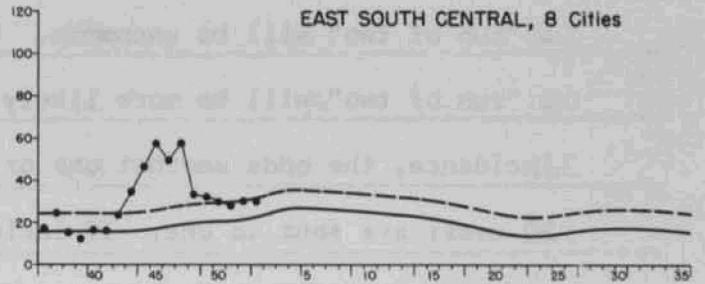
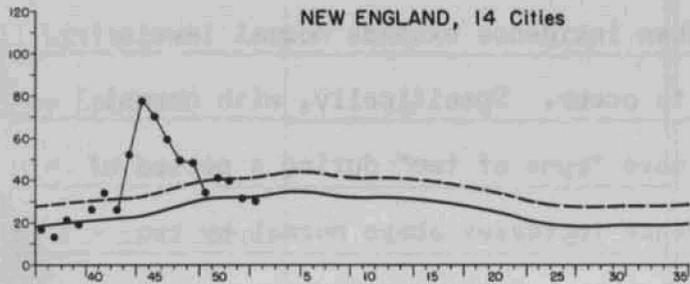
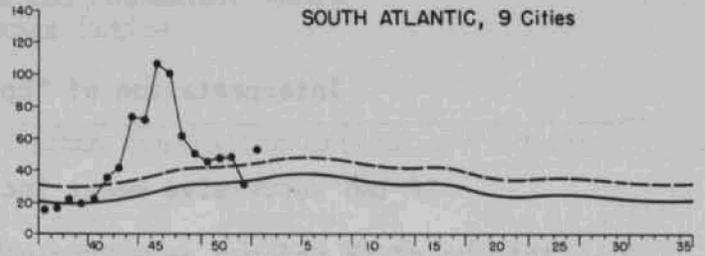
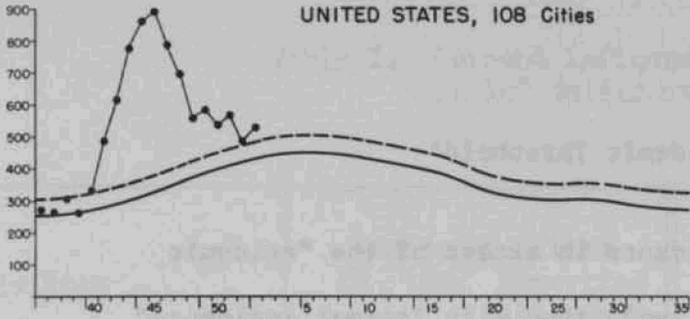
I. Summary of Information

There is no indication of an upsurge of influenza on a nationwide basis, and very few states report new outbreaks. Although there are occasional reports of recurrent outbreaks in previously affected populations, these are not being reported with significant frequency. Only 14 of the 36 industrial areas showed elevated absenteeism through the last week in December, and excess mortality from influenza and pneumonia shows only minor fluctuations in a continued downward trend. Unless a second epidemic wave develops, the Influenza Surveillance Report will be published at two-week intervals until further notice.

A total of 54,442,984 ml. of Asian strain influenza vaccine was released through December 18. No recent releases have been reported. There is additional evidence that encephalitis may occasionally develop following influenza. Complete proof of cause and effect is difficult to obtain, but several case reports have established the diagnosis of Asian strain influenza in persons with acute encephalitis.

WEEKLY PNEUMONIA AND INFLUENZA DEATHS

----- "EPIDEMIC THRESHOLD"
 _____ "NORMAL INCIDENCE"
 (SEE EXPLANATION ON BACK OF SHEET)



NUMBER OF DEATHS

Interpretation of "Epidemic Threshold"

If two successive weeks incidence in excess of the "epidemic threshold" is defined as a "run of two", then with "normal incidence" a "run of two" will be uncommon. When incidence exceeds normal levels a "run of two" will be more likely to occur. Specifically, with normal incidence, the odds against one or more "runs of two" during a period of 52 weeks are four to one. If incidence increases above normal by two standard deviations the odds are even that a "run of two" will follow immediately.

A description of the method used in constructing the charts is given in Influenza Surveillance Report No. 16.

II. Current Analysis of Influenza and Pneumonia Mortality*

Table I. Current Influenza and Pneumonia Deaths
in 108 United States Cities

Division	Number of Cities In Study Reporting this week		Deaths (including estimates**) during weeks ending		
			December 21 (108 cities)	December 28 (107 cities)	Jan. 4, 1958 (104 cities)
All Divisions	103	104	565	483	527
New England	14	12	40	32	30
Mid. Atlantic	17	16	153	126	140
E. North Central	18	18	98	105	101
W. North Central	9	9	48	41	35
S. Atlantic	9	9	48	31	53
E. South Central	8	8	28	30	30
W. South Central	13	12	62	54	73
Mountain	8	8	21	20	18
Pacific	12	12	67	44	47

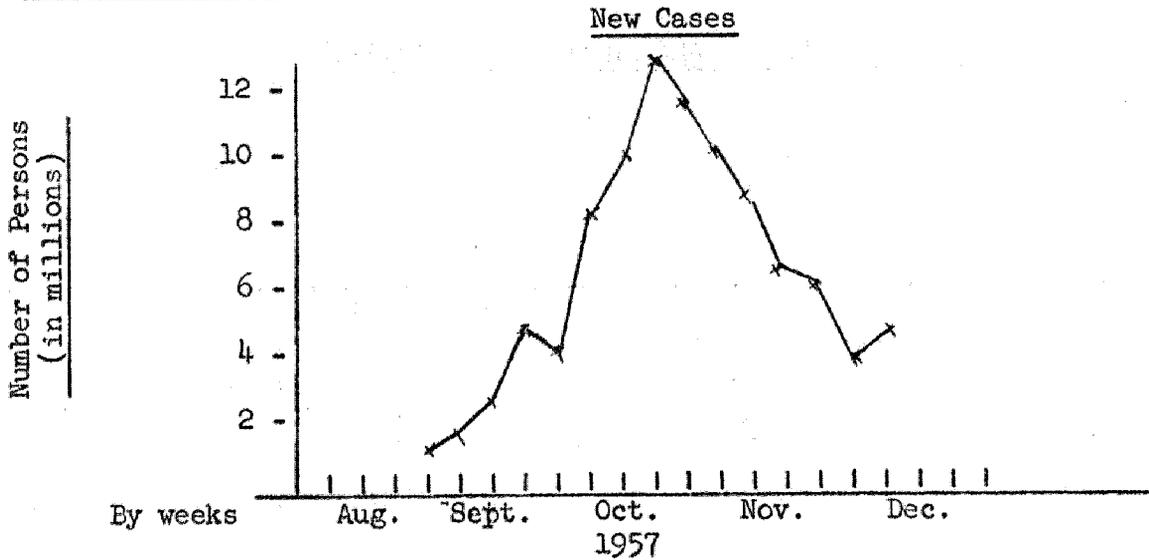
**The number of deaths given includes estimates for cities not reporting in a given week. The table is corrected for preceding weeks as late figures are received. The chart will be corrected only for gross discrepancies.

Comment

Pneumonia and influenza mortality figures for the nation during the past six weeks have shown minor fluctuations during a continued downward trend. Although the United States total showed a rise this week, this was chiefly due to increases in the South Atlantic and West South Central Divisions. At present, there is no indication that the increases represent a noteworthy departure from the established trend.

*Prepared by the Statistics Section, CDC.

III. Data from National Health Survey (Under the direction of Dr. Forrest Linder)



ACUTE UPPER RESPIRATORY DISEASES*
Estimates for continental United States

Week	New cases involving one or more days of bed disability	Average number of persons in bed each day
Aug 4 - 10	955,000	339,000
Aug 11 - 17	1,181,000	447,000
Aug 18 - 24	1,758,000	675,000
Aug 25 - 31	2,159,000	654,000
Sept 1 - 7	1,819,000	651,000
Sept 8 - 14	2,279,000	856,000
Sept 15 - 21	4,487,000	1,152,000
Sept 22 - 28	3,952,000	2,094,000
Sept 29 - Oct 5	7,773,000	2,845,000
Oct 6 - 12	9,712,000	4,551,000
Oct 13 - 19	12,238,000	5,812,000
Oct 20 - 26	11,033,000	5,665,000
Oct 27 - Nov 2	9,808,000	6,372,000
Nov 3 - 9	8,297,000	5,262,000
Nov 10 - 16	5,648,000	3,389,000
Nov 17 - 23	5,305,000	2,867,000
Nov 24 - 30	3,339,000	2,518,000
Dec 1 - 7	**3,742,000	**2,236,000

*Including influenza, pneumonia, and other similar conditions.

**Provisional.

The above data are compiled from the household interview survey which is a part of the program of the U. S. National Health Survey. The household survey is conducted by trained and supervised lay interviewers. The weekly samples consist of interviews for about 700 households or 2,200 persons. Since data are collected for the two prior weeks, each week's interviewing gives information on 4,400 person-weeks of health experience. Approximate sampling errors are in the range of 15%. The estimates of sampling error do not include allowance for error of response and nonreporting.

IV. Industrial Absentee Rates for 36 Cities of the United States

(Compiled from a number of sources)

City	% of Total Absent						
	Nov. 1956	Sept. 29 1957	1-5	October 1957			10/27- 11/2
				7-11	13-19	20-26	
Boston	6.8	-	-	-	9.2	9.7	10.3
Manhattan	3.3	-	-	UP	7.9	6.5	5.3
Buffalo	6.5	-	9.4	8.4	8.2	7.4	6.8
Syracuse	5.6		UP/NR	-	8.6	7.7	7.0
Philadelphia	5.3	-	-	9.0	11.6	10.3	8.5
Pittsburgh	3.7	-	-	9.5	13.0	12.4	7.7
Washington	5.4	-	7.1	7.2	8.7	9.6	9.2
Baltimore	6.2	-	-	UP/NR	9.6	9.9	10.5
Richmond	4.8	-	-	-	-	8.9	13.8
Atlanta	5.5		UP/NR	UP	7.3	7.2	8.2
Miami	7.3	-	-	-	-	-	-
Memphis	4.5	-	-	-	-	*	6.5
Birmingham	4.7	-	-	UP	6.6	*	7.5
Nashville	3.4	-	-	UP/NR	6.8	*	9.5
Jacksonville	6.2	-	-	-	-	8.5	9.1
New Orleans	5.3	-	-	-	-	9.2	8.7
Cleveland	4.0		-	5.0	5.3	4.8	5.2
Columbus	5.9		-	-	5.8	7.2	7.5
Cincinnati	4.5	-	-	-	7.3	7.6	6.9
Detroit	5.8	-	9.8	11.4	9.1	*	7.6
Indianapolis	5.1	-	-	-	7.9	*	10.7
Milwaukee	7.3	-	-	8.0	10.2	9.5	7.6
Chicago	5.7	-	7.8	8.2	8.2	7.6	6.9
Minneapolis	4.7	-	-	-	6.6	7.3	7.7
Omaha	5.2	-	-	-	7.5	7.6	8.7
St. Louis	4.2	-	-	-	4.9	6.5	7.8
Kansas City	4.3	-	-	-	6.3	8.3	9.2
Houston	4.1	-	-	UP/NR	7.1	5.6	4.8
Dallas	3.8	-	-	-	5.6	7.3	10.3
Oklahoma City	3.3	-	-	-	3.8	4.5	5.8
Denver	8.1	-	10.2	11.8	9.6	9.5	-
Phoenix	7.8	-	10.8	9.5	8.1	-	8.8
Salt Lake City	4.9	-	9.8	10.5	9.4	8.3	6.4
San Francisco	8.6	-	-	-	-	10.1	10.0
Seattle	5.4	-	-	-	6.1	7.1	6.5
Los Angeles	5.6	-	-	-	6.2	7.5	-

- = normal absentee rate
 UP = increased absenteeism
 NR = no rate available

*Data not available

Industrial Absentee Rates for 36 Cities of the United States (Continued)

City	% of Total Absent							
	November 1957				December 1957			
	3-9	10-16	17-23	24-30	1-7	8-14	15-21	22-28
Boston	10.4	8.6	8.5	7.5	7.3	7-7	8.9	8.5
Manhattan	4.3	3.9	4.0	4.1	4.4	4.7	4.4	4.7
Buffalo	-	-	7.2	-	-	6.6	7.1	-
Syracuse	5.8	5.8	-	-	-	-	-	6.1
Philadelphia	7.1	6.0	6.3	5.8	6.3	-	-	-
Pittsburgh	6.4	4.8	5.1	4.4	4.5	5.8	4.4	4.7
Washington	8.3	5.6	5.5	-	6.5	5.9	6.8	-
Baltimore	10.4	7.5	7.8	-	7.1	6.6	6.5	-
Richmond	9.0	6.3	6.4	6.6	5.9	5.9	5.9	5.4
Atlanta	8.7	7.2	7.0	5.9	-	6.9	8.0	8.2
Miami	-	8.5	-	7.4	7.8	-	-	-
Memphis	6.2	4.7	4.6	4.8	-	-	5.7	-
Birmingham	6.6	6.2	5.7	-	-	-	-	-
Nashville	10.7	6.5	5.9	4.8	4.8	4.5	4.2	4.0
Jacksonville	10.0	9.1	8.8	6.5	6.7	7.2	10.0	8.3
New Orleans	7.7	6.9	7.0	6.0	6.1	6.2	8.0	8.9
Cleveland	5.4	4.3	4.2	-	-	-	-	-
Columbus	6.2	-	-	-	-	-	-	-
Cincinnati	6.3	5.5	6.3	-	-	-	-	*
Detroit	7.1	7.5	6.6	-	6.4	6.7	6.8	6.1
Indianapolis	10.3	-	5.5	-	-	-	-	-
Milwaukee	7.3	7.9	-	-	-	7.8	8.0	-
Chicago	6.1	6.0	-	-	-	-	-	-
Minneapolis	6.8	5.6	5.8	5.2	6.2	5.9	5.7	5.1
Omaha	8.2	5.6	5.3	-	-	-	-	-
St. Louis	8.1	5.7	5.8	-	-	-	-	-
Kansas City	7.0	7.1	6.5	4.7	-	-	-	-
Houston	4.7	-	-	-	-	-	-	4.6
Dallas	9.7	7.5	7.1	5.4	5.2	5.6	5.3	4.8
Oklahoma City	6.1	5.3	5.2	3.6	4.4	4.3	5.1	-
Denver	-	-	-	-	-	-	-	-
Phoenix	-	-	-	8.7	8.0	-	-	-
Salt Lake City	6.2	5.7	6.5	6.8	6.5	6.9	8.1	6.9
San Francisco	10.5	8.8	8.8	-	9.5	9.1	8.9	-
Seattle	8.3	6.8	6.2	-	5.8	5.8	6.2	-
Los Angeles	-	-	-	-	-	-	-	-

- = normal absentee rate
 UP = increased absenteeism
 NR = no rate available

*Data not available

V. Influenza Vaccine Production and Distribution

Influenza Vaccine Released

(Totals through December 18, 1957)

<u>Pharmaceutical Concern</u>	400 cca Monovalent Asian strain	200 cca Monovalent Asian strain	Polyvalent with Asian strain
Lederle	1,051,600 ml	8,264,220 ml	537,960 ml
Lilly	1,605,590	2,146,717	748,140
Merck, Sharp & Dohme	4,640,630	13,884,520	--
National Drug	1,106,000	7,465,275	2,054,435
Parke, Davis	--	944,070	--
Pitman-Moore	3,070,840	5,015,042	1,907,945

Total released through December 18: 54,442,984 ml

No vaccine released between December 11 and December 18.

VI. Influenza Associated with Encephalitis

Several cases of encephalitis associated with Asian strain influenza have been previously reported (CDC Influenza Surveillance Report Nos. 19, 20, 24). Although none of these had been proved as influenza by laboratory tests, there was good epidemiological evidence. Recently we have received confirmation of Asian strain influenza in several of these cases of encephalitis. Because influenza was highly prevalent during the fall months of 1957, there is always the possibility that influenza and encephalitis of unknown etiology occurred coincidentally. However, the clinical pattern of an influenza-like illness, followed in a few days by encephalitis, and in some cases with rising HI titers for influenza, strongly suggests a causal relationship. Brief summaries of several cases are reported below:

Missouri - Reported by Dr. E. A. Belden, Director, Bureau of Communicable Disease, Missouri Department of Health.

Age 4, white male - Onset of illness was October 29, with fever. He was first seen by his physician November 2, at which time he had a temperature of 100°, cough, and a few rales in the left lower lobe. At 5 p.m. on November 2, the patient collapsed and was slightly cyanotic. There was marked expiratory grunt and random eye movements. The child did not recognize his parents. There was no elevation of white cells in the spinal fluid. There was gradual recovery over the following four days. Bloods were collected on November 4 and November 27 and HI tests were as follows: Asian strain 1:20 and 1:80; A/Denver 1:80 and 1:640; B/G1 1:320 and 1:320. An increase of this degree in the HI titer for the Denver strain had not occurred in any other specimens run by the laboratory. Despite the significance of the increase in the Denver strain, it seemed more likely that the patient had Asian influenza in view of the local epidemic situation.

Age 14 months, white female - Onset was November 1, with cough, "flu," and a slight fever. She was hospitalized November 7, with a temperature of 99.8. She was in a semi-comatose state but moved irritably when

given penicillin injections. She had a red throat, stuffy nose, many rhonchi and a few rales. The neck was supple. The pupils were small, round, and regular and reacted to light. The parents and the previous attending physician stated that the pupils had been large and the neck stiff. Spinal fluid findings were within normal limits. On November 8, her parents reported that a sibling had just broken out with measles and the patient was given immune globulin. At this time, the patient was awake and alert but continued to sleep more than usual. She continued to improve during the next four days and was discharged from the hospital November 12. Two blood specimens were examined from this patient, one collected November 23 and the second December 16. An acute blood specimen could not be located. The results of HI tests were as follows: Asian strain 1:160 and 1:160; A/Den neg and 1:5; B/G1 1:10 and 1:10.

Kansas - Reported by Dr. M. L. Furcolow, Chief, Kansas City Field Station, Communicable Disease Center.

Age 15, white female - Developed typical flu on October 21. The following day she had a severe headache and fever of 100. On October 25 she became agitated and delirious, requiring restraint. After sedation she lapsed into a deep coma and awakened three days later. There were no neurologic sequelae. A spinal tap performed during her period of coma revealed elevated protein and normal cells. Serology was negative for mumps, St. Louis, Eastern Equine and Western Equine encephalitis. A specimen of blood taken on the eighth day and a convalescent specimen had titers of greater than 1:256 for Asian influenza by HI test. At the same time that the patient was ill, a younger brother developed an illness compatible with Asian influenza. The patient had received no influenza vaccine.

Louisiana - Reported by Lawrence Dietlein, Jr., M. D., USPHS, William Pelon, Ph. D., and William Mogabgab, M. D., Tulane University.

Age 23, colored male recently returned from Japan - On September 11 developed typical influenza, which improved in about a week. On September 23 he developed severe headache, cough, high fever, and became lethargic. His symptoms of nausea and vomiting became more pronounced and his legs felt weak. On September 25 he was intermittently semi-comatose and was unable to move his legs. Pupils were pinpoint and a coarse nystagmus was observed. His neck was stiff and the tendon reflexes were absent in lower extremities. Lumbar puncture revealed opening pressure of 220 with 250 WBC, 90% lymphs, protein 122 mgm%, sugar 50 mgm%. Blood showed WBC 30,650 with 89% polys.

His initial course was hectic, with nausea, vomiting, abdominal distension, hiccupping and inability to void spontaneously. His paralysis cleared in a few days, with only slight residual weakness in the right upper, left lower extremities. Laboratory studies were negative for Eastern equine encephalitis, mumps and poliomyelitis; and repeat serological studies were negative for typhoid, brucellosis, tularemia, syphilis, and typhus. A positive serological diagnosis of "Asian" strain influenza was established with a titer rise from 1:16 on September 26 to 1:128 on October 12. Although other diseases have not been completely excluded, the evidence for influenza is good.

Colorado - Dr. Luther Giddings, at Greeley Field Station, states that one case of encephalitis from Greeley has been confirmed as Asian influenza and that the University of Colorado has had five confirmed cases of encephalitis secondary to Asian influenza, with one being a fatal case.