FOR ADMINISTRATIVE USE

CDC INFLUENZA REPORT

NO. 18 SEPTEMBER 24, 1957

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service Bureau of State Services
Communicable Disease Center
Robert J. Anderson, Chief

Keith E. Jensen, Ph. D.
CDC Virus and Rickettsia Section*
P. O. Box 61
Montgomery 1, Alabama
Telephone No. AMherst 3-4468

*Serving as WHO International Influenza Center for the Americas

Yates Trotter, Jr., M. D.
Frederick L. Dunn, M. D.
Influenza Surveillance Unit*
Communicable Disease Center
50 Seventh Street, N. E.
Atlanta 23, Georgia
Telephone No. TRinity 6-3311
Extension 5455

*This report prepared with assistance from Statistics Section, CDC

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.

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I. Summary of Information

It is now evident that the opening of schools has resulted in a great increase in influenza cases. Most of the new epidemics reported are in schools and colleges located in all sections of the country. Weather conditions appear to be unrelated to the recent increase, because many of these have occurred in Utah, Florida, and Arizona where mild weather prevails at this season. A listing of the school outbreaks published below demonstrates their general character. Attack rates are averaging about 20% and complications have been rare. These school-centered outbreaks are already beginning to spread to the general community.

A twenty-two-year-old serviceman died in Arizona with Staphylococcal aureus pneumonia following influenza. He had received antibiotic therapy. This is the sixteenth death due to influenza or complications reported in this country. Fourteen others have been reported from Hawaii and Puerto Rico. Staphylococcal pneumonia has been a prominent cause of death in the younger age group in the United States. The weekly analysis of excess mortality from influenza and pneumonia in American cities reveals no remarkable increases.

A total of 6,957,032 ml. of Asian flu vaccine has been released to date. This includes 1,526,590 ml. released during the week September 11-18.

Estimated vaccine production:

September	12,200,000 ml.
October	24,500,000 ml.
November	34,500,000 ml.

The subcutaneous injection of 1.0 ml. of Asian flu vaccine is recommended for routine adult vaccinations. Recent studies suggest that a single intradermal inoculation with 0.1 ml. is not a satisfactory substitute, and that a second 0.1 ml. intradermally two weeks later is necessary in order to approach antibody responses obtained with the full 1.0 ml. subcutaneously.

As part of a world program sponsored by WHO, swine and horse infection by Asian strain influenza is being studied by state and USPHS veterinarians. Pre-epidemic serum specimens are being frozen and will be compared with specimens from the same animals following a human flu epidemic.

An appendix describes the symptoms of influenza in infants and young children ill during the recent influenza epidemic in Sydney, Australia.

II. Epidemic and Case Reports

18-A LOUISIANA

(Reported by Dr. J. D. Martin, Louisiana Department of Health.)

On September 16, 135 out of a total enrollment of 325 were absent from Sicily Island High School because of influenza. There were 20 cases among the townspeople.

At Lecompte School, in Alexandria, 187 out of 430 enrolled were ill with influenza-like disease. One hundred ninety-eight students have been sent home from Lowery High School in Donaldsonville since school began. Redemptorist High and LSU have had mild outbreaks among their football team members.

18-B NEW YORK

(Reported by Dr. Robert M. Albrecht and Dr. Julia Freitag, New York Department of Health, and Dr. Jerome Klein, Epidemic Intelligence Service.)

On September 16, 350 out of 1500 children were ill with influenza at Oswego, New York. Three small grade schools in the same area had 10% attack rates and closed on September 17. One school in a low socioeconomic area of Niagara Falls City reported 80 of 400 pupils absent on September 16 with fever, myalgia, and headache.

In Wayne County, site of a recent outbreak in migrant workers, one central school reported 275 absentees among 1200 students on September 19. Another high school had 124 absentees among 900 students, apparently due to influenza.

18-C UTAH

(Reported by Dr. A. A. Jenkins, Utah Department of Health, and Dr. Luther Giddings, Epidemic Intelligence Service.)

The outbreak in schools reported in preliminary form last week, has continued. In Salt Lake City West High School absenteeism was 287 (13%); Jackson Junior High School absenteeism was 181 (36%); Horace Mann Junior High School absenteeism was 95. Of these 563 absentees, 100 had been seen by physicians and diagnosed as flu.

In Magna (Utah) High there were 387 absentees due to flu (35%). In Davis County, Layton Central Junior High School reported 170 absentees (20%).

Dragerton reported 198 cases, plus an estimated 100 not under medical care. Dragerton's Community Grade School had 385 absentees (70%). Follow-up in homes of affected pupils indicates all are bona fide absences due to actual illness.

Cyprus High School reported 25% absent; Valley Junior High, 50%; and Olympus High School, Salt Lake County, 538 absent (38%).

18-D COLORADO

(Reported by Dr. R. L. Cleere, Colorado Department of Health, and Dr. Francis Weber, Regional Medical Director.)

An outbreak of influenza-like disease has occurred at the University of Colorado, involving several hundred students. It has been reported, also, that some 1200 influenza cases have occurred among servicemen at Fort Carson, Colorado Springs.

18-E MISSISSIPPI

(Reported by Drs. A. L. Gray and Durward Blakey, Mississippi State Board of Health.)

Outbreaks in schools or community areas increased during the week ending September 14. These were at Keesler Field, Hinds County School, Clarke County, and Greene-Wayne County line area. Up to 40% of the population has or has had influenza in some areas, according to Dr. Gray, Director of Preventable Disease Control. The estimated total number of cases for the state was 24,000.

18-F TEXAS

(Reported by Dr. J. E. Peavy, Texas Department of Health.)

The school system in Jasper was closed on September 17, when 400 of 2000 came down with what appeared to be influenza. Texas Christian University reports about 450 ill with influenza-like disease. At Texas A.&M. at least 600 or 7,400 students had influenza. About 20 members of the Port Arthur High School football team were knocked out by what is believed to be influenza. Dr. J. G. Flowers, President of Southwest Texas State College, reported resumption of classes on September 23, after an outbreak of flu involving over 500 of 2300 students.

18-G ARIZONA

(Reported by Dr. C. G. Salsbury, Arizona State Board of Health.)

Clifton High School was closed when 50% of the student body became ill with influenza. Absenteeism in Clifton Elementary School was high enough to cause it to close, also. In Phoenix one school reported 15% influenza attack rate among students, and 60 cases were reported from the State College at Tempe.

18-H ILLINOIS

(Reported by Dr. N. J. Rose, Illinois Department of Public Health.)

An estimated 140 cases have occurred among 310 boys, aged 14-18, at a seminary in DuPage County. The first case began September 10 in a boy returning to school from an area in Texas where influenza was prevalent. An interesting symptom is the condition of the throat--very bright red, with so much cobbling that the throat has the appearance of rasberries. Duration was almost always 3-5 days. At least 25 throat washings were taken. No complications were noted, even in a rheumatic and an asthmatic.

Throat washings and blood specimens have been obtained from a sampling of some 1000 students with influenza-like illness among 3000 enrolled at Oak Park High School. Sixty cases among 900 students at North Central College, in Naperville, have also been reported.

18-I OREGON

(Reported by Dr. S. B. Osgood, Oregon State Board of Health.)

An epidemic of influenza has involved 185 out of 650 Navajo Indians at Chemawa Indian School. The epidemic began on September 3 and peaked on September 12. Most of the cases occurred in students brought by bus from New Mexico and Arizona on August 28. It is felt that the total attack rate will eventually reach 50-60%. One death from "encephalitis" is being investigated.

Other outbreaks under investigation include:

Beaverton High School	200 suspect cases
Bonanza High School	60 suspect cases
Bly School	80 suspect cases
Klamath Union High	300 suspect cases
Prineville High	300 suspect cases
Madras Elementary	160 suspect cases
Silverton High	74 suspect cases

It is felt that Asian strain influenza is on the rise in Oregon.

18-J OKLAHOMA, Norman

(Reported by Capt. J. R. Seal, MC, Division of Preventive Medicine, U. S. Navy.)

An outbreak of confirmed Asian strain influenza has occurred at Norman Naval Base. At least 50 cases have been reported, and one of these has been confirmed.

18-K WEST VIRGINIA

(Reported by Dr. N. H. Dyer, West Virginia Department of Health.)

About 130 sporadic cases of influenza-like illness have been reported from West Virginia to date. There have been no major outbreaks as yet.

18-L VIRGIN ISLANDS

(Reported by Dr. R. A. Anduze, Virgin Islands Department of Health.)

Three hundred fifty-nine cases of suspect influenza have been reported for the week ending September 14. These are the first cases reported from the Territory.

18-M SOUTH CAROLINA, Greenville

(Reported by Dr. G. E. McDaniel, South Carolina State Board of Health, and Dr. Jacob Brody, Epidemic Intelligence Service.)

An outbreak of influenza-like illness has occurred among the students of Bob Jones University, Greenville. At least 100 cases, none

yet confirmed, have been reported. Laboratory specimens are under study.

18-N VERMONT

(Reported by Dr. C. C. Dauer, National Office of Vital Statistics.)

The first Vermont suspect Asian strain cases of influenza, about 80, have appeared in an outbreak at Ethan Allen Air Force Base.

III. Progress Reports

Report from Charity Hospital, New Orleans

(Data provided by Hospital Staff and Dr. J. D. Martin, La. Dept. of Health)

Patients seen in the Admitting Room and the number with influenza-like illness.

Week Ending	NEGRO Total Patients Seen	NEGRO Flu-Like Illness	NEGRO % of Total	WHITE Total Patients Seen	WHITE Flu-Like Illness	WHITE % of Total
Aug. 10	2724	206	7.5	882	19	2.1
Aug. 17	2850	391	13.6	850	38	4.5
Aug. 24	3330	918	27.4	967	130	13.5
Aug. 31	5641	1479	26.0	1489	206	13.7
Sept. 7	5033	1414	28.0	1385	207	14.9
Sept. 14	4427	1123	25.2	1480	154	10.4

18-O PUERTO RICO

(Reported by Dr. G. Arbona, Puerto Rico Department of Health.)

Excess school and industry absenteeism to date is about 170,000 for the territory as a whole. Analysis of influenza morbidity reports indicate that the epidemic is probably near its peak.

IV. DEATHS - Deaths Specifically Associated with Influenza

New Reports

Ha. 1-7 (Reported by Dr. J. R. Enright, Hawaii Department of Health.)

Ha. 1 An 18-year-old Hawaiian male developed a typical influenza-like illness about July 23, during the influenza epidemic on the island of Maui. By the evening of the 24th he was very ill, delirious, with temperature of 105.6°. He was treated for hyperpyrexia at a hospital. Oxygen, intravenous fluids, and chloromycetin were also administered. A lumbar puncture was unremarkable. The patient went into coma, developed Cheyne-Stokes respiration, and expired at 3:10 a.m. July 25. Cause of death was given as "hyperpyrexia due to severe influenza." Post-mortem examination apparently was not performed.

The cases described below occurred, except for Ha. 2, during the period of epidemic Asian strain influenza in Hawaii and Oahu. None

apparently, have been confirmed in the laboratory.

Ha. 2 A 53-year-old female Japanese of rural Oahu died in a convalescent home on June 13 of cardiac complications resulting from pre-existing hypertensive cardiovascular disease and acute influenzal-like illness. An autopsy was not performed.

Ha. 3 A 72-year-old female Caucasian of rural Hawaii died on July 19 of acute congestive heart failure precipitated by influenza. The patient was hospitalized. An autopsy was not performed.

Ha. 4 A 74-year-old male Chinese of Honolulu died of bronchopneumonia complicating influenza on July 25. The patient died in a convalescent home and post-mortem examination was not done.

Ha. 5 An 81-year-old female Japanese of Honolulu died in a convalescent home of cardiac failure and bronchopneumonia secondary to typical influenza on July 27. No autopsy was performed.

Ha. 6 A seven-months-pregnant, 35-year-old Japanese female of Honolulu died August 13 of bilateral bronchopneumonia complicating influenza-like illness. She was hospitalized but an autopsy was not obtained.

Ha. 7 A 72-year-old Japanese female of rural Oahu died on August 26 of acute bronchopneumonia secondary to influenza. She, also, was hospitalized and again no autopsy was obtained.

Ar. 1 ARIZONA, Fort Huachuaca

(Reported by Dr. C. G. Salsbury, Arizona Department of Health.)

A 22-year-old soldier arrived at Fort Huachuaca from Fort Leonard Wood, Missouri, about September 17. An influenza outbreak was in progress at Fort Huachuaca, but the patient was already ill with influenza which he contracted in an epidemic at Fort Leonard Wood. Complicating pneumonia was detected shortly after arrival and vigorous antibiotic therapy was instituted; but the patient expired on September 22. Micrococcus pyogenes (staphylococcus) var. aureus was cultured from the lung and heart blood obtained at autopsy. Further studies are in progress.

P. R. 1-7 (Reported by Drs. Guillermo Arbona, Puerto Rico Department of Health, and Dr. Alfonse Masi, Epidemic Intelligence Service.)

Seven deaths specifically associated with influenza have been reported to date during the Puerto Rican epidemic. An analysis of excess mortality data, however, shows no increase over 1956 for the month of August.

Puerto Rico:	Deaths from Influenza and Pneumonia
Aug. 1956	111
Aug. 1957	116

These data are not yet available for September.

Four deaths (P. R. 1-4) due to influenza complication have been reported without details. All were pneumonic complications--two of unknown etiology, one probably pneumonococcal, and one staphylococcal. These deaths apparently occurred in the very young or the aged.

Three deaths have been reported in some detail. A 2½-year-old male (P. R. 5) became ill September 11 and expired September 13. He had had a preexisting "bronchial condition." The diagnosis of influenza was clinical.

A 3-month-old female (P. R. 6) also died September 13 during an influenza-like illness; and an 82-year-old male (P. R. 7) died on the same day--again with the diagnosis only clinical. Investigations of these cases are in progress.

V. Influenza Vaccine Production and Distribution

Influenza Vaccine Released
(Totals through September 18, 1957)

Pharmaceutical Concern	Monovalent Asian strain	Polyvalent with Asian strain
Lederle	1,806,380 ml.	473,280 ml.
Lilly	293,380	16,335
Merck, Sharpe & Dohme	1,158,460	
National Drug	1,249,820	1,292,205
Parke Davis	99,250	
Pitman Moore	567,922	

Total released to date:	6,957,032 ml.
Amount released since September 11:	1,526,590 ml.

Shipping Destination:

Department of Defense	2,041,920 ml.
Commercial channels	4,915,112 ml.

Estimated Vaccine Production:

September	12,200,000 cc.
October	24,500,000 cc.
November	34,500,000 cc.

VI. Miscellany

a. Intradermal Vaccination

Because of the present shortage of Asian influenza vaccine, many physicians have inquired about the possibility of stretching supplies by

giving 0.1 ml intradermally rather than the recommended 1.0 ml subcutaneously for adults. The use of small intradermal inoculations has been studied extensively with typhoid vaccine, but such studies are difficult to interpret in regard to influenza and may not be in any way comparable. Available data on other strains of influenza vaccine suggest that adequate antibody levels may be obtained by intradermal inoculation if the inoculum contains sufficient antigen.

It is impossible to state precisely the value of intradermal or subcutaneous vaccination with Asian vaccine at this time. In the first place, those antibodies which are measured by the hemmagglutination-inhibition test may not be the ones responsible for protection against disease. Experience with previous type A vaccines shows a trend toward correlation between HI antibody level and protection, but there are numerous exceptions. For this reason we cannot be certain about relative protection until vaccinated persons have been challenged in an epidemic. There are no epidemic challenge studies using intradermal influenza vaccine.

Dr. Hilleman of WRAIR reported the following studies relating subcutaneous to intradermal vaccination with Asian strain vaccine.

"The response to the 0.1 cc intracutaneous dose, containing only 16 units of virus, was almost as good as to the 10 times greater amount 160 units given subcutaneously."

Recent studies by Dr. Keith Jensen at CDC have provided further information: To compare the antibody response produced by the two routes, fifty-four volunteers were given 50 cca units intramuscularly and 31 volunteers were given the same dose intradermally. There was no significant difference in the number responding or in the antibody titer. This suggests that the intradermal vaccination is in no way superior to the intramuscular. When a smaller dose of 25 cca units was given, a smaller number of responses were obtained and titers were correspondingly lower. Unfortunately there is no data using 25 cca intradermally in this study, but here again results may be expected to be quite low because of the very small amount of antigen in the injection.

Strain	Route	CCA	Number tested	% with titers of 10 or higher	Geometric* Mean Titer
A/Asian/Jap/305/57	Intramuscular	50	54	70.4	35.0
	Intradermal	50	31	61.3	56.2
A/Asian/Formosa/313/57	Intramuscular	25	48	39.6	39.9
		50	27	85.2	84.4

*Antibody responses determined by HI tests with sera taken 2 weeks after vaccination

The present recommended dose for routine adult vaccination remains 200 cca (1 ml) subcutaneously.

b. The role of animals in the epidemiology of Asian strain influenza

Serologic evidence suggesting that the etiologic agent of swine influenza is the same virus that caused the 1918 human influenza pandemic has generated considerable interest in the possibility of an

animal role in the epidemiologic picture of Asian strain influenza. Type A influenza strain antibodies have, in fact, recently been identified in both swine and horses. Thus far Asian strain antibodies have not been detected however.

The World Health Organization has requested that veterinarians in the United States participate in a survey to help shed more light on the above problem. Swine and horse sera will be collected in several states, as well as in a number of other countries, before and after Asian strain epidemics occur in the human population. The pre-epidemic specimens will be frozen and stored. If an epidemic occurs in the human population of the area second specimens will be obtained from the same animals. The paired sera will then be used to determine whether or not swine and horses play a role in the epidemiology of the disease.

VII. Current Analysis of Influenza and Pneumonia Mortality

Table 1

Current Influenza and Penumonia Deaths
in 108 United States Cities

Division	Number of Cities In Study	Number of Cities Reporting this week	Deaths (including estimates*) during weeks ending Sept. 7 (108 cities)	Sept. 14 (108 cities)	Sept. 21 (99 Cities)
All Divisions	108	99	270	263	312
New England	14	13	17	13	22
Mid. Atlantic	17	15	79	74	88
E. North Central	18	18	41	55	61
W. North Central	9	7	18	20	20
S. Atlantic	9	9	15	16	22
E. South Central	8	7	17	24	11
W. South Central	13	11	26	27	41
Mountain	8	8	6	7	9
Pacific	12	11	51	27	38

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

Comment

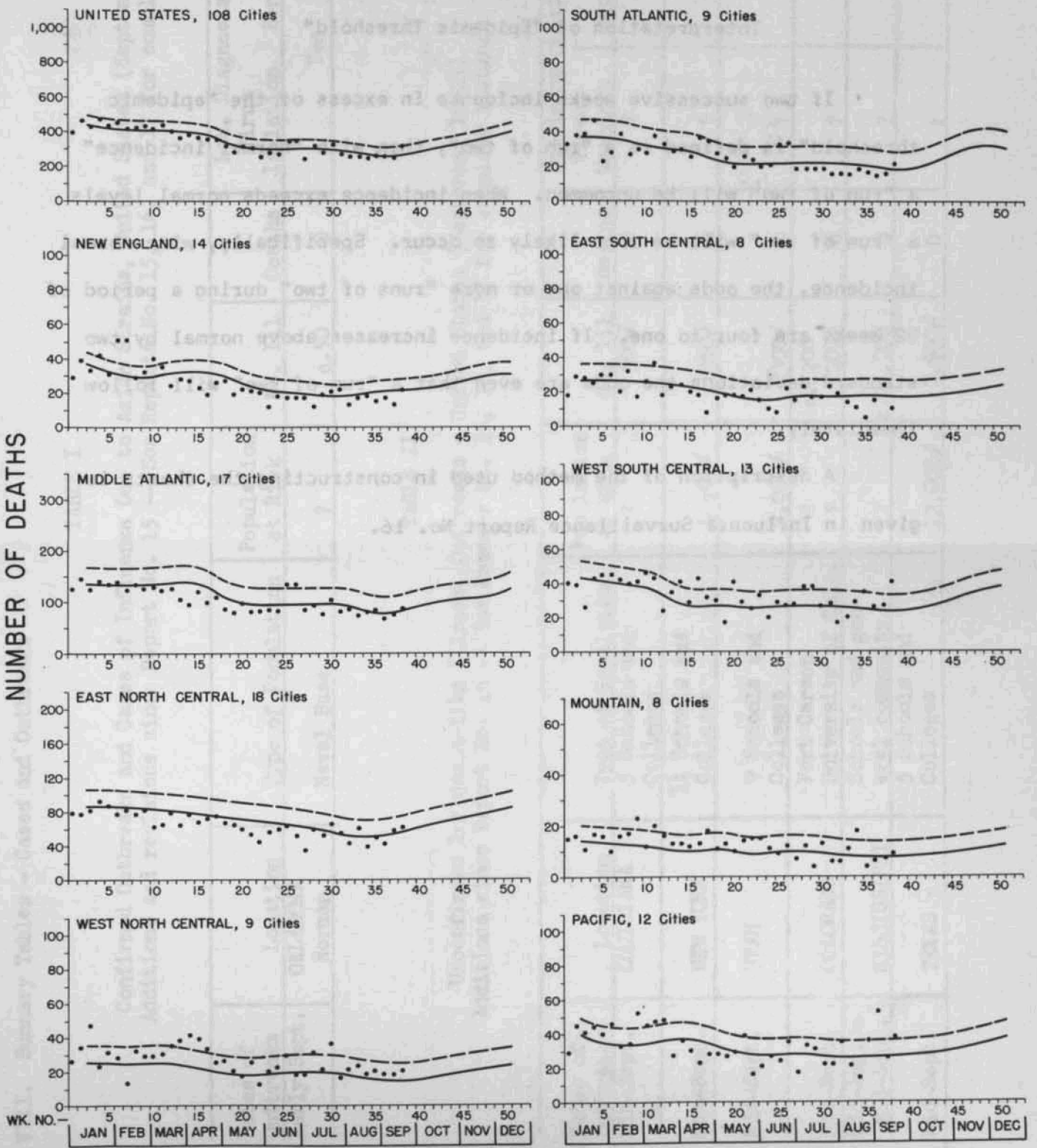
The western divisions remained slightly above "normal" this week with the West, South Central and Pacific states showing highest levels. However, the increases are not excessive in any division.

WEEKLY PNEUMONIA AND INFLUENZA DEATHS

"EPIDEMIC THRESHOLD"

"NORMAL INCIDENCE"

(SEE EXPLANATION ON BACK OF SHEET)



DHEW - PHS - BSS - CDC

ATLANTA, GA. 58-70

SEPTEMBER, 1957

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.

VIII. Summary Tables - Cases and Outbreaks

TABLE I

Confirmed Outbreaks and Cases of Influenza Due to Asian Strains, United States (September 18-23)
Additions and revisions since Report No. 15 — See Reports No. 15, 16, and 17 for complete listings

Dates of Outbreaks	Location	Type of Population	Population at Risk	No. Ill	Deaths	Lab. Diagnosis by Virus Isolation	Lab. Diagnosis by Serology	CDC Influenza Report Number
Early Sept.	OKLAHOMA Norman	Naval Base	?	c.50	0	Yes		18-J

TABLE II

Unconfirmed Influenza-like Illness, Outbreaks - United States (September 18-23)
Additions since Report No. 15 -- See Reports No. 15, 16, and 17 for complete listings

Dates of Outbreaks	Location	Type of Population	Population at Risk	No. Ill	Deaths	Specimens Obtained Throat Washings	Specimens Obtained Blood	CDC Influenza Report Number
Mid-Sept.	LOUISIANA	5 Schools and Colleges	?	500/	0	?	?	18-A
Mid-Sept.	NEW YORK	11 Schools and Colleges	5,000/	1250/	0	?	?	18-B
Mid-Sept.	UTAH	9 Schools and Colleges	7,000/	2300/	0	?	?	18-C
Mid-Sept.	COLORADO	Fort Carson University of Colo.	? ?	c.1200 200/	0	?	?	18-D
Mid-Aug. - Mid-Sept.	MISSISSIPPI	Schools and general community	?	c.24,000	0	?	?	18-E
Mid-Sept.	TEXAS	5 Schools and Colleges	12,000/	2,800/	0	?	?	18-F

TABLE II (Continued)

Dates of Outbreaks	Location	Type of Population	Population at Risk	No. Ill	Deaths	Specimens Obtained: Throat Washings	Specimens Obtained: Blood	CDC Influenza Report Number
Mid-Sept.	ARIZONA	3 Schools and Colleges	High Absentee Rates		0	?	?	18-G
Mid-Sept.	ILLINOIS	Male Seminary	310	140	0	Yes	?	18-H
		1 School; 1 College	3900	1060	0	Yes	Yes	
Early and mid-Sept.	OREGON	Schools	?	c.1400	1	?	?	18-I
Early and mid-Sept.	WEST VIRGINIA	Sporadic cases	—	131	0	?		18-K
Early Sept.	VIRGIN ISLANDS	Sporadic cases	—	359	0	?		18-L
Mid-Sept.	SOUTH CAROLINA Greenville	College	c.3000	100+	0	Yes		18-M
Mid-Sept.	VERMONT	Air force base	?	c.80	0	?		18-N

TABLE III

Outbreaks of Febrile Respiratory Diseases -- Etiology Other Than Asian Strain Influenza or No Specimens Obtainable

No Additions
Omitted from this Report

TABLE IV

DEATHS

Reported Instances of Deaths Specifically Associated with Influenza, United States
June 1, 1957 through September 23, 1957

State and No.	Locale of Death	Age	Sex	Date of Onset	Date of Death	Diagnosis of Influenza	Contributory Factors and/or Reported Cause of Death	CDC Influenza Report Number
Cal. 1	San Diego	58	M	July 7	July 16	Clinical (CF Test 1:64)	Bronchopneumonia**	9, 15
Cal. 2	San Diego	44	M	July 17	July 21	Clinical	Coronary occlusion	9
Cal. 5	Davis	57	F	June 29	July 4	Clinical	Acute Toxic Myocarditis**	9, 1-G, 3-J
Cal. 6	Mare Island	20	M	June 10	June 13	Clinical	Bilateral Lobar Pneumonia with Consolidation (etiol. M. pyogenes var. aureus)**	9
Cal. 7	San Diego	33	F	July 8	July 15	Clinical	Hemorrhagic Interstitial Pneumonitis**	9, 15
Cal. 8	Monterey	21	M	July 21	July 24	Virus Isolation	Bilateral lobar Pneumonia with Consolidation (etiol. M. pyogenes var. aureus)**	12, 13
Cal. 9	San Jose	16	M	Aug. 14	Aug. 17	Virus Isolation	Bilateral Lobar Pneumonia with Consolidation (etiol. M. pyogenes var. aureus)**	14
Cal. 10	Berkeley	?	F	Aug. 23	Aug. 27	Clinical (CF Test 1:256)	Pneumonia, Encephalitis and Brain Stem Involvement**	16

**Post-mortem examination performed.

TABLE IV (Continued)

State and No.	Locale of Death	Age	Sex	Date of Onset	Date of Death	Diagnosis of Influenza	Contributory Factors and/or Reported Cause of Death	CDC Influenza Report Number
Cal. 11	San Francisco	25	M	?	?	Clinical	"Hemorrhagic Pneumonia"**	16
N. Y. 1	New York City	18	M	Aug. 13	Aug. 14	Virus Isolation	Hemorrhagic Pneumonitis**	12, 13
R. I. 1	Newport	15	M	Aug. 19	Aug. 23	Virus Isolation	Hemorrhagic Pneumonitis, Interstitial Myocarditis	15
La. 1	Tangipahoa Parish	2	M	July 30	July 31	Clinical (family outbreak)	DOA - Febrile Respiratory Illness	11, 13
La. 2	New Orleans	17	F	Aug. 15	Aug. 22	Clinical	Hemorrhagic Pneumonia**	16
La. 3	Tangipahoa Parish	26	M	Late August		Clinical (family outbreak)	Pneumonia, Rheumatic Heart Disease	16
La. 4	New Orleans	28	M	Late August		Clinical Asian strain confirmed from wife	Pneumococcal Pneumonia**	17
P.R. 1-7	Puerto Rico	7 deaths in infants and old persons during September specifically ascribed to influenza or complicating pneumonia.						18
Ha. 1-7	Hawaii	7 deaths, primarily in old persons, during June, July and August						18
Ar. 1	Arizona Fort Huachuaca	22	M	?	Sept. 22	Clinical (Community epidemic)	Pneumonia (etiol. M. pyogenes var. aureus)**	18

**Post-mortem examination performed.

Appendix: CDC Influenza Report No. 18

Influenza Symptomatology in Infants and Young Children
Sydney, Australia -- Summer 1957

The information presented below is reproduced from a memo prepared at The Institute of Child Health, Royal Alexandra Hospital for Children, Sydney, Australia. Inasmuch as infants and young children have not been appreciably affected to date in the United States these sorts of data have not been currently available here. Many questions have come to CDC about symptomatology and severity of influenza in the very young. It is felt that these Australian data may be of value in this regard. It is noteworthy that gastrointestinal symptoms have not been particularly prominent in the very young in Australia. In several outbreaks in the United States involving young children the frequent occurrence of diarrhea and vomiting along with more typical symptoms has been remarked upon.

"Influenza" - July - August, 1957

"The following is a description of the clinical course of Influenza as seen at the present time among children in Sydney, Australia, where virologically proven Asian variety pf Influenza A is epidemic among adults. The disease described below has not been virologically proven in children as the Asian variety of Influenza A, but it is considered a reasonable assumption that it is the same disease."

BABIES

Prodromal stage: lasting 1-2 days - cranky, irritable, off food, pale.

1st day Symptoms: loose cough with hoarse cry - apparently cough is painful; nose is often blocked; anorexia+++ - even refusing fluids.

Signs: fever - vicinity of 101° - irritable, resent handling and cry when touched - neck may appear stiff.
Mouth - dry, with frequent ulceration inside lips and cheeks; mucous membranes bright red.
Postpharyngeal wall - "raw-red" appearance with sticky clear post-nasal mucous.
Tonsils - enlarged and red - no exudate.
Soft palate - small petechiae occasionally.
Cervical odenitis well marked.
Transient laryngo - tracheitis and bronchitis are common.
No rashes - conjunctivitis very rare.

2nd day
3rd
4th
5th day

Fever continues, reaching highest point at 2nd or 3rd day. Cough may become paroxysmal for a few days. Complete anorexia and refusal of fluids are marked features. Catarrhal otitis media is common. In majority, symptoms cease abruptly. Small percentage continue with fever for 9-10 days. Otitis media and gastrointestinal symptoms (? secondary infection) occur in 2nd week. Majority have recovered after 7 days, although pale and lethargic.

OLDER CHILDREN

Prodromal stage: lethargy, vague limb pains, headache.

1st day Symptoms - fever, sore throat, anorexia, slight cough, occasional vomiting, abdominal pain and thirst.

Signs: Fever - 101°

Tonsils and pharynx - oedematous and red with raw granular appearance of posterior pharyngeal wall. Occasional petechiae on soft palate and posterior pharynx. Clear sticky post-nasal mucous and post-nasal blockage.

Cervical odenitis - well marked.

Transient bronchitis in some cases.

2nd day Pains in chest associated with harsh cough due to tracheitis.

Fever often very high - 104°-105°.

Muscle tenderness well marked.

Abdominal pain and vomiting may be a feature.

Epistaxis common.

3rd - 4th days Usually improving, but fever, abdominal pain, cough and epistaxis may persist for about 1 week. Diarrhoea may occur and otitis media is not uncommon.

Sore throat disappears rapidly after the first day or so, but cough may persist for a week or more after other symptoms have abated.

Mild relapse with fever sometimes occurs after about 1 week.