

CDC INFLUENZA SURVEILLANCE REPORT

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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.

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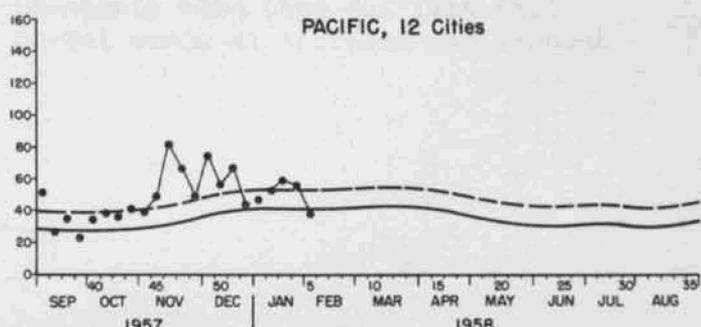
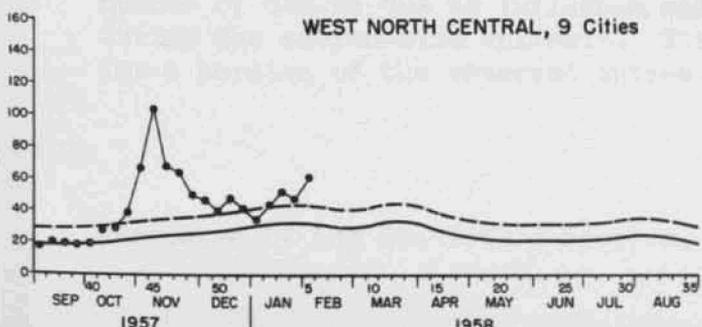
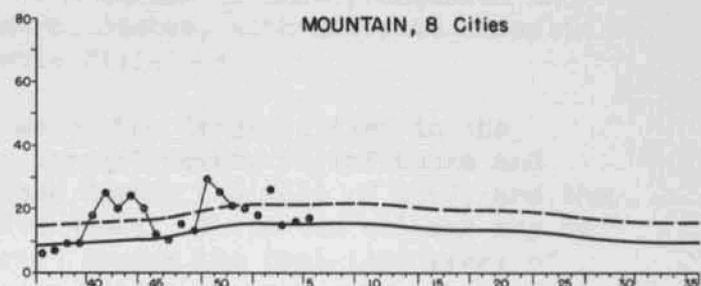
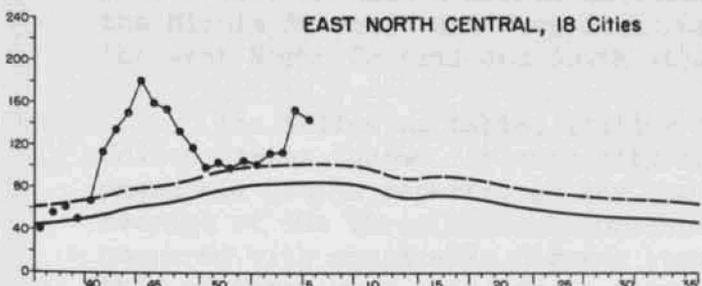
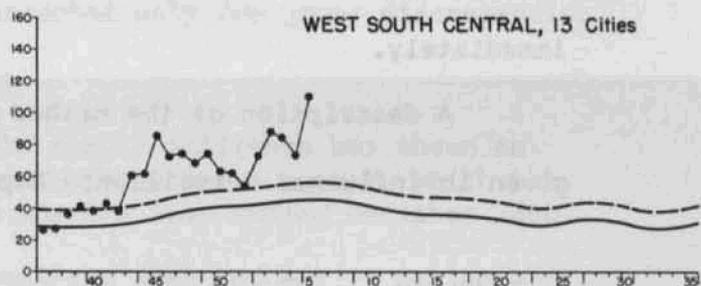
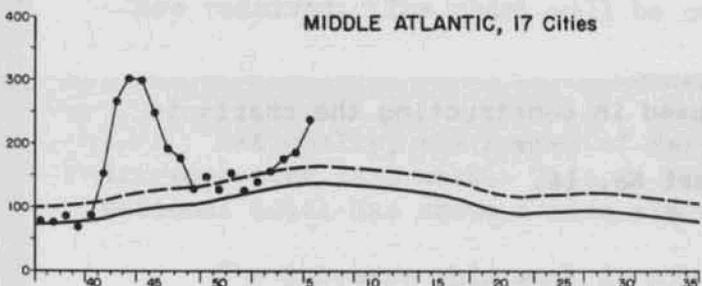
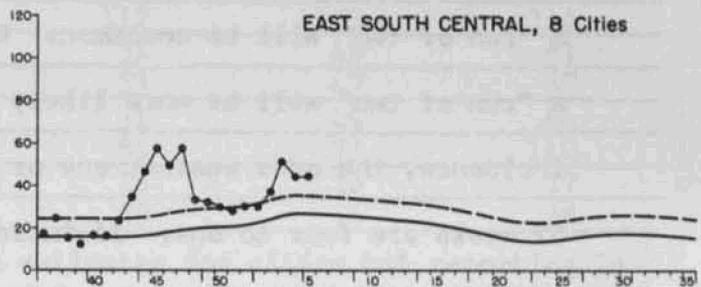
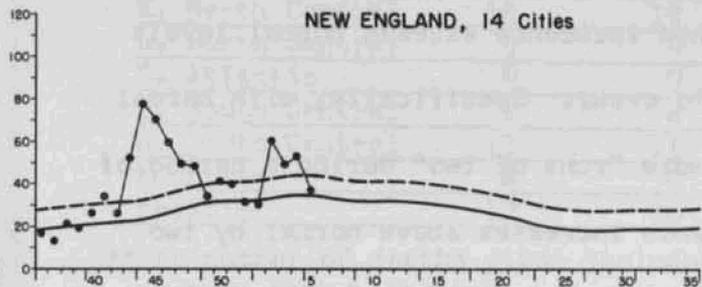
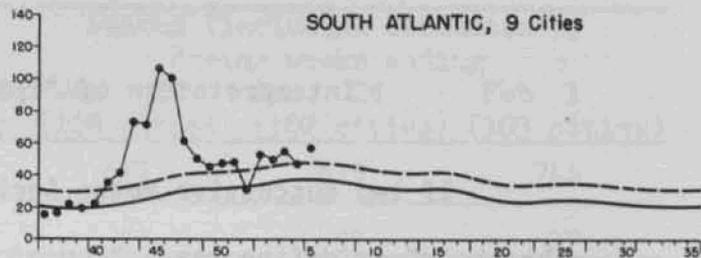
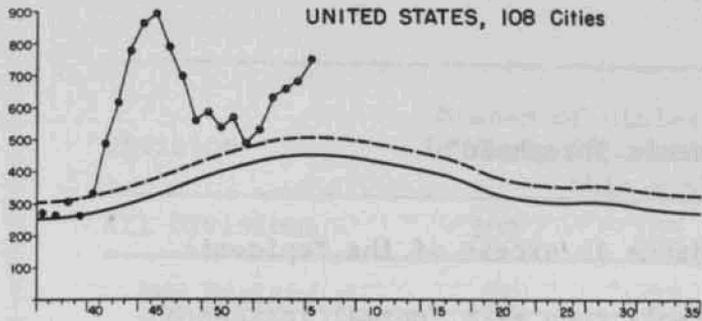
## I. Summary of Information

Deaths from influenza and pneumonia continue to increase for the fifth straight week. A simultaneous increase in deaths from all causes has been observed. These increases are significantly above the expected values, compared with the same weeks for the past five years. The cause of this increased mortality remains unknown. No large outbreaks of influenza have been reported and the National Health Survey and industrial absenteeism remain within seasonal except in a few cities. It appears that deaths are mostly due to pneumonia rather than influenza, and that the 65+ age group is most affected.

Intensive studies are being made of death records in selected cities. Such studies will yield further information about age distribution, socio-economic status, primary and secondary cause of death, and clinical course. Any previous history of influenza will be determined. Negative information about influenza will of course be important. Although it is hoped that these studies will yield the answer, we continue to solicit information from health officers and clinicians about this problem. We need a better sense of the local situation throughout the country. Small bits of information may be combined to form a complete explanation.

# WEEKLY PNEUMONIA AND INFLUENZA DEATHS

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



NUMBER OF DEATH

## 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		
			Jan 18 (108 cities)	Jan 25 (102 cities)	Feb 1 (103 cities)
All Divisions	108	103	651	675	744
New England	14	13	50	53	37
Mid. Atlantic	17	17	175	185	236
E. North Central	18	18	112	153	144
W. North Central	9	9	52	48	61
S. Atlantic	9	9	53	47	57
E. South Central	8	8	51	44	44
W. South Central	13	11	84	73	110
Mountain	8	8	15	16	17
Pacific	12	10	59	56	38

\*\*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

Nationally, the number of deaths due to influenza has shown an increase over last week. This is the 6th consecutive week in which the national total has shown a rise since the low week ending December 28th.

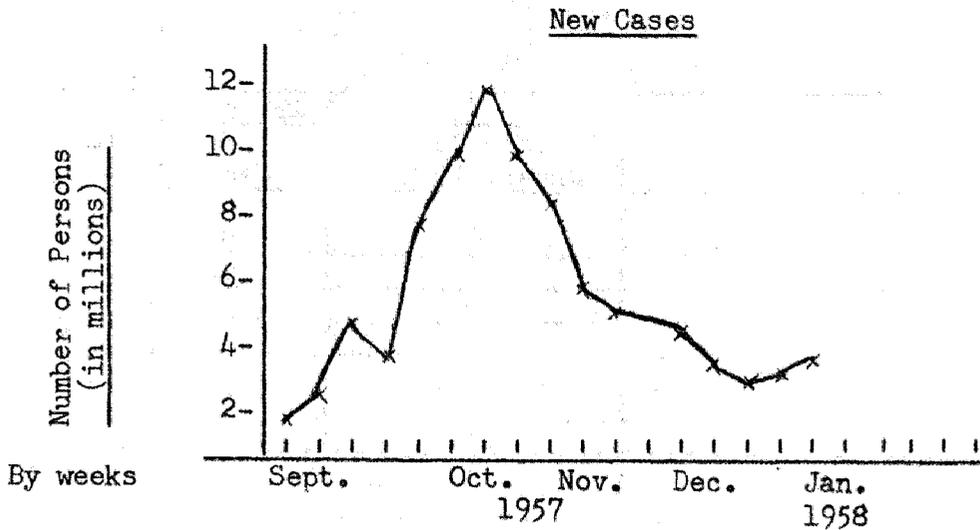
The increase this week is not uniform over the entire nation - some Divisions show a marked decline. The excess is most pronounced in the Middle Atlantic and West South Central States, with moderate rises in the West North Central and South Atlantic Divisions.

The following table, listing some of the larger cities in the United States, shows for each city the largest number of influenza and pneumonia deaths reported in any one week during the fall of 1957, and the average of the three highest consecutive weeks. These two columns may be compared with comparable figures reported during the past five weeks of this calendar year. As can be seen, some cities are now reporting larger number of deaths due to influenza and pneumonia than they did last fall during the nation-wide epidemic. The normal seasonal increase may account for a portion of the observed increase.

Reported Number of Influenza and Pneumonia Deaths  
First 5 Weeks in 1958

City	Fall of 1957		1958		Number Influenza & Pneumonia Deaths				
	Highest Week	Average of 3 Highest Consecutive Weeks	Highest Week	Average of 3 Highest Consecutive Weeks	Reported 1-4	Week Ending 1-11	1-18	1-25	2-1
Boston	22	17	-	-	9	7	16	NR	NR
Buffalo	10	6	2	1	1	2	0	0	0
New York City	181	170	155	130	85	91	108	128	155
Philadelphia	51	41	29	20	14	27	19	13	29
Pittsburgh	23	21	13	8	7	13	5	1	7
Chicago	77	66	67	63	44	51	57	67	64
Cincinnati	12	11	7	4	7	4	1	5	6
Cleveland	11	9	8	6	4	8	3	6	2
Detroit	23	21	33	26	18	12	20	33	24
Milwaukee	10	7	9	6	2	3	2	7	9
Minneapolis	22	16	5	4	1	5	4	4	1
St. Louis	20	18	30	27	10	19	29	23	30
Baltimore	19	18	12	10	11	8	8	10	12
D.C.	21	18	22	16	10	14	13	12	22
Birmingham	5	5	8	7	2	6	8	8	5
Louisville	21	19	17	12	17	7	13	9	13
Memphis	13	9	9	7	4	3	4	9	8
Dallas	12	8	6	4	2	5	6	1	6
Houston	13	10	23	17	14	9	14	14	23
New Orleans	9	7	20	18	16	21	14	20	20
San Antonio	16	12	16	12	11	16	9	9	15
Denver	13	10	8	7	3	5	9	5	8
Salt Lake City	8	6	5	3	4	5	1	4	2
Los Angeles	36	26	27	20	21	15	19	27	13
San Francisco	8	6	14	12	7	8	12	14	11
Seattle	13	9	8	6	5	4	8	6	1

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



ACUTE UPPER RESPIRATORY DISEASES\*  
Estimates for continental United States

Week	New cases involving one or more days of bed disability
Sept 1 - 7	1,819,000
Sept 8 - 14	2,279,000
Sept 15 - 21	4,487,000
Sept 22 - 28	3,952,000
Sept 29 - Oct 5	7,773,000
Oct 6 - 12	9,712,000
Oct 13 - 19	11,933,000
Oct 20 - 26	11,033,000
Oct 27 - Nov 2	9,808,000
Nov 3 - 9	8,297,000
Nov 10 - 16	5,648,000
Nov 17 - 23	5,305,000
Nov 24 - 30	3,339,000
Dec 1 - 7	4,271,000
Dec 8 - 14	3,667,000
Dec 15 - 21	3,241,000
Dec 22 - 28	3,430,000
Dec 29 - Jan 4	**3,724,000

\*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 non-reporting.

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

City	% of Total Absent		
	Average for January 1957	Week ending (1958) Jan. 18      Jan. 25	
Boston	9.6	9.4	9.6
Manhattan	4.5	5.0	5.0
Buffalo	6.9	6.0	6.7
Syracuse	6.5	6.6	6.2
Philadelphia	6.3	7.0	7.2
Pittsburgh	4.9	5.6	5.3
Washington	7.1	5.5	6.1
Baltimore	7.1	5.9	6.2
Richmond	4.9	5.9	6.6
Atlanta	5.8	4.5	4.8
Miami	6.7	7.5	9.4
Memphis	4.7	4.5	5.0
Birmingham	5.9	3.6	5.2
Nashville	4.7	4.6	4.4
Jacksonville	7.8	7.0	6.6
New Orleans	7.0	7.0	7.4
Cleveland	3.7	4.0	3.6
Columbus	5.1	3.6	3.5
Cincinnati	4.9	4.5	3.9
Detroit*	7.1	7.9	8.7
Indianapolis	5.4	3.5	4.0
Milwaukee*	6.6	7.6	9.5
Chicago	6.5	6.7	6.8
Minneapolis	5.4	5.1	5.2
Omaha	6.2	6.5	6.0
St. Louis	4.5	3.9	4.8
Kansas City	4.0	4.3	7.8
Houston*	4.0	10.3	7.4
Dallas	4.7	5.3	6.2
Oklahoma City	4.6	4.0	4.3
Denver	7.4	6.0	5.9
Phoenix	7.8	7.0	6.9
Salt Lake City	4.1	7.3	6.2
San Francisco	9.4	7.8	7.4
Seattle	4.8	6.1	6.5
Los Angeles	5.1	3.7	4.1

\*Cities with both increased absenteeism and recent elevated mortality.

V. Mortality Data from New York City

(Compiled by Mr. Arthur Cohen, EIS Statistician, with the assistance and cooperation of Dr. Morris Greenberg and Mr. Louis Weiner, New York City Health Department.)

Table I

Mortality Report from New York City for Five Weeks Ending in January 1958.

WEEK ENDING	Jan 1	Jan 9	Jan 16	Jan 23	Jan 30
Total Deaths	1844	1922	1921	1952	2059
Under 1	86	101	92	80	93
65 and over	1053	1075	1101	1134	1151
Flu Deaths	-	2	5	3	5
Pneumonia Deaths	85	89	103	125	150

New York is one of several large cities experiencing a marked recent increase in total deaths as well as influenza-pneumonia deaths. The following information helps define the nature of these deaths. For the week ending January 24, 1958, the death rate from all causes was 12.9 per 1000 for the city, whereas the expected rate was 11.0. This means that there was an excess of 297 deaths over the expected number, and an excess of 83 deaths over the upper confidence limit. Pneumonia and influenza accounted for 128 of the total deaths that week, and in the week ending January 30, accounted for 155 deaths. Although this is approaching the peak week of the fall epidemic when 193 deaths were reported, it should be noted that currently pneumonia is a more prominent cause than influenza. To illustrate, during the fall, 13% of the influenza-pneumonia category was primarily influenza. During the recent 5 weeks, only 2% has been called influenza. A general breakdown of mortality for the past 5 weeks is given in Table I.

Table II

Flu and Pneumonia Deaths by Age in New York City

Age	<u>Oct 5 - Nov 29 (8 weeks)</u>		<u>Dec 21 - Jan 24 (5 weeks)</u>	
	Deaths	%	Deaths	%
Less than 1	61	6.21	52	10.0
1-4	27	2.75	12	2.44
5-14	18	1.83	7	1.42
15-24	38	3.87	6	1.22
25-44	109	11.10	37	7.52
45-64	286	29.11	125	25.40
65+	<u>443</u>	<u>45.10</u>	<u>253</u>	<u>51.41</u>
	982	100	492	100

Table II shows the age distribution of influenza pneumonia deaths during the fall epidemic compared to the recent five weeks. It is apparent that much of the increase has occurred in the 65+ age group.

Further comparisons showed no sex or color difference. It was found that approximately 26% of the flu-pneumonia deaths were autopsied. The Medical Examiner in New York City stated that, "there are practically no sudden deaths, which is strikingly different from the epidemic period when there were several." A close examination of 56 deaths from flu and pneumonia revealed 36 Bronchopneumonia, 11 Lobar, 3 Influenza, and 6 others. The average interval between onset and death was 3 days. Specimens of lung from 11 fatal pneumonias have yielded 8 negatives for influenza virus, while 3 are still being examined.

A report just received from New York City shows that the total death rate for the week ending January 31 is 12.6. This is distinctly above normal, but represents a decline.

## VI. The Excess Death Problem

Deaths from pneumonia and influenza are continuing to increase for the fifth straight week. There has also been a significant increase in the mortality from all causes. Even though the expected seasonal increase is considered, there is a definitely abnormal increase in deaths. It is natural to attribute the excess to a continuation of the influenza epidemic, but there is no evidence to support this. Examination of the National Health Survey figures, the industrial absenteeism, school absenteeism, and reports from health officials reveals no widespread outbreaks of influenza. Small outbreaks are occurring constantly, but in the past influenza mortality has been significant only during an epidemic.

It is not yet possible to determine the cause (or causes) of these deaths, but certain patterns are appearing. At present the increases are largely in the eastern half of the country, particularly the Middle Atlantic states. Most of the excess is in the 65+ age group, and is reported as pneumonia rather than influenza. On the other hand, clinicians in hospitals have remarked at the relatively low incidence of pneumonia being seen, and the absence of fulminating influenzal pneumonia. Several hypotheses have been suggested. The mortality may be due to influenza in older persons who are relatively inactive, and thus escaped contact during the fall epidemic. Another explanation might be a delayed death caused by sequelae of influenza in the fall.

To get the answer, we have sent our officers to several cities where they will study death records. These cities have been selected on the basis of significant mortality, adequate facilities, and wide geographical distribution. In cooperation with city and state authorities, they will review age distribution, sex ratios, primary and secondary causes of death, and similar factors. When possible, hospital records will be consulted. At the same time, we will request pathologists to submit lung specimens for viral isolation from fatal pneumonias whether influenza is suspected or not. Health officials are again asked to help by providing information and suggestions, and by stimulating more virological studies.