REPORT NO. 74
FEBRUARY 15, 1963

COMMUNICABLE DISEASE CENTER

INFLUENZA

SURVEILLANCE

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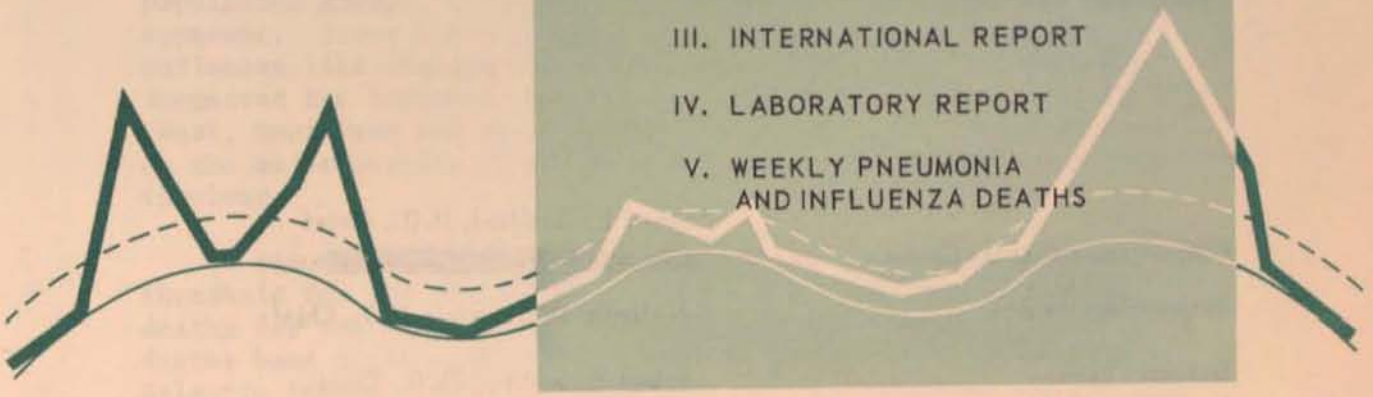

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

PREFACE

Summarized in this report is information received from State Health Departments, university investigators, virology laboratories and other pertinent sources, domestic and foreign. Much of the information is preliminary. It is intended primarily for the use of those with responsibility for disease control activities. Anyone desiring to quote this report should contact the original investigator for confirmation and interpretation.

Contributions to the Surveillance Report are most welcome. Please address to: Chief, Influenza Surveillance Unit, Communicable Disease Center, Atlanta 22, Georgia.

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I. SUMMARY

Epidemics of influenza-like disease are presently widespread in several areas of the Eastern United States. The first confirmed outbreak of influenza of the current season began in early January in Robeson County in southern North Carolina.

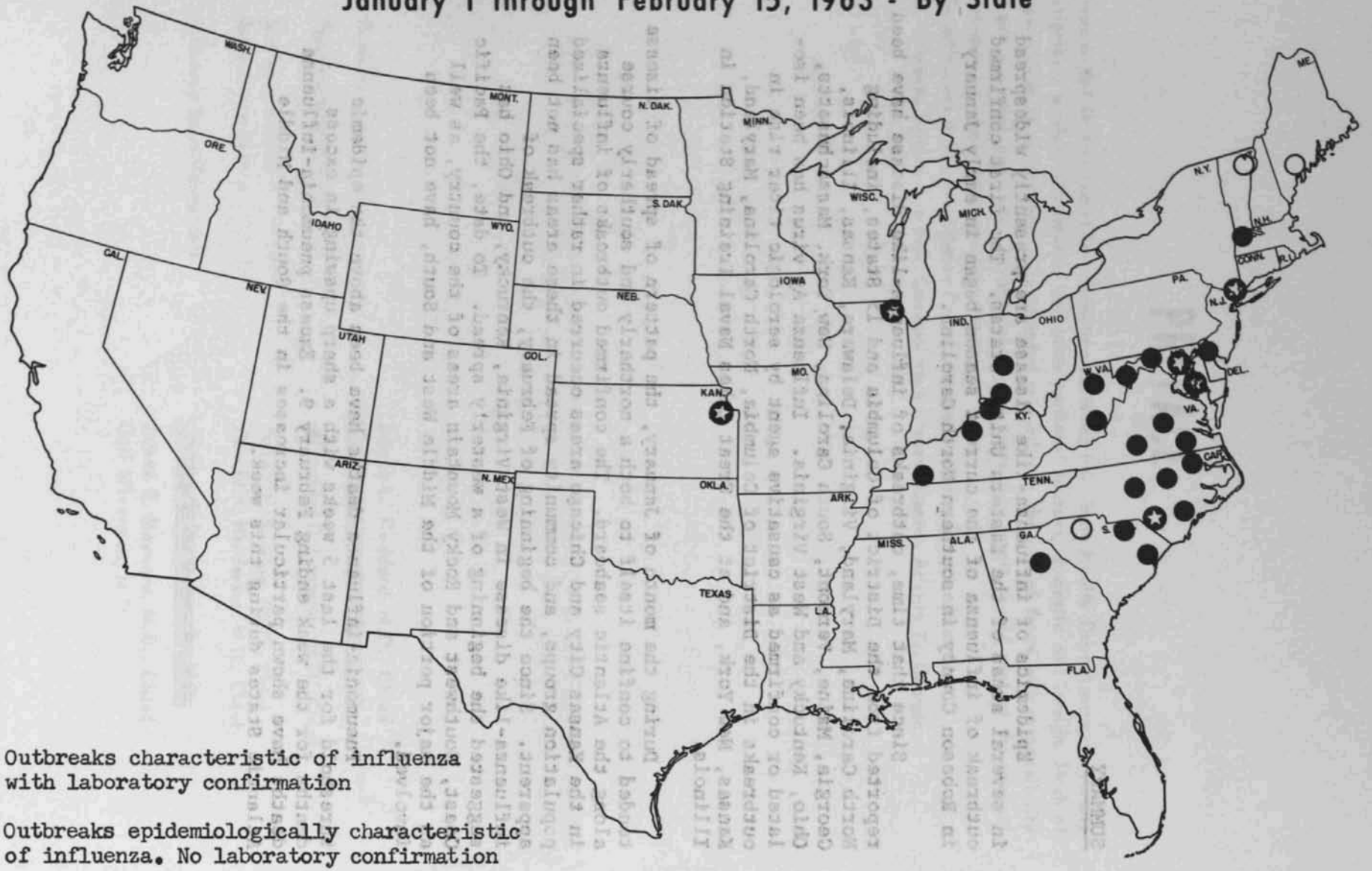
Since that time, outbreaks of influenza-like disease have been reported from the District of Columbia and 15 States, including North Carolina, Maryland, Virginia, Delaware, Kansas, Illinois, Georgia, Maine, Vermont, South Carolina, New York, Massachusetts, Ohio, Kentucky and West Virginia. Influenza A_2 virus has been isolated or confirmed as causative agent by serologic titer rise in outbreaks in the District of Columbia, North Carolina, Maryland, Kansas, New York, and at the Great Lakes Naval Training Station in Illinois.

During the month of January, the pattern of spread of disease tended to confine itself to both a northerly and southerly course along the Atlantic seaboard. The confirmed outbreaks of influenza in the Kansas City and Chicago areas occurred in rather specialized population groups, and community spread in these areas has not been apparent. Since the beginning of February, the outbreak of influenza-like disease in West Virginia, Kentucky, and Ohio has suggested the beginning of a westerly spread. To date, the Pacific Coast, Southwest and Rocky Mountain areas of the country, as well as the major portion of the Middle West and South, have not been involved.

Pneumonia-influenza deaths have been above the epidemic threshold for the last 5 weeks with a sharp upswing in excess deaths for the week ending February 9. Excess pneumonia-influenza deaths have shown particular increases in the South and Middle Atlantic States during this week.

INFLUENZA AND INFLUENZA-LIKE DISEASE OUTBREAKS U. S. A.

January 1 through February 15, 1963 - By State



Outbreaks characteristic of influenza with laboratory confirmation

Outbreaks epidemiologically characteristic of influenza. No laboratory confirmation

Outbreaks of febrile respiratory disease resembling influenza
Adequate epidemiologic characterization lacking. No laboratory confirmation

II. EPIDEMIC REPORTS

North Carolina:

The first laboratory confirmed Asian influenza outbreak of the current season was reported from Robeson County in southeastern North Carolina.

The epidemic was recognized during the first week of January when physicians in the southern and central portions of the county first observed an increase in cases of acute febrile respiratory disease. These patients presented with a syndrome of headache, myalgia, chilly sensations, weakness, fatigue and mild cough of variable duration and generally lasting 3--4 days. A small percentage of cases (estimated at 10%) also complained of nausea and vomiting. Physical examination typically revealed fever varying from 100--104°.

School absenteeism began to rise above usual levels for a nonepidemic period (about 5% for the county) on January 7. First to be affected were the towns of Fairmont and Pembroke where absence rates of 12--18% were noted among elementary and high school students. By January 11, the outbreak had spread to involve most of the southern portion of the county including the county seat of Lumberton. A survey of schools throughout the county on that date revealed absentee rates of 12--31%. The epidemic spread to involve communities in the northern part of the county during the following two weeks, and by January 26 had also involved neighboring Hoke and Cumberland Counties to the north.

Additional epidemic foci within the State were recognized in mid-January. These involved three northern counties adjoining the Virginia border, as well as Wake County in the central part of the State, where the town of Fuquay Springs, a community about 20 miles south of Raleigh, was first to be affected. By early February communities in almost all parts of the State were involved. For the week ending February 8, 77 of 82 reporting counties indicated that outbreaks of influenza-like disease were current. The epidemic had passed its peak only in Robeson and Hoke Counties, sites of the earliest outbreaks; other areas continued to report increasing numbers of cases. The western portion of the State is the only area presently free of community-wide outbreaks, although sporadic cases have been reported.

Throat washings and paired sera obtained from nine patients residing in the Pembroke area of Robeson County were submitted to the Respirovirus Laboratory at the Communicable Disease Center. Greater than fourfold titer rises to the A_2 antigen were demonstrated in 8 of the 9 sets of paired sera when tested for H.I. (hemagglutination inhibition) antibody. In each of these 8 cases,

North Carolina (continued)

throat washings inoculated into eggs have yielded a hemmaglutinating virus. Only one of these has been definitely identified as influenza A_2 thus far. The remaining isolates are presumed to be influenza A_2 on the basis of the serologic evidence although definitive characterization must await serial passage of the virus. The remaining set of paired sera demonstrated a significant titer rise to parainfluenza virus, type 1. Parainfluenza virus type 1 was also recovered from throat washings obtained from this patient. Additional specimens obtained from a number of epidemic areas throughout the State have been received at the State laboratories in Raleigh and are currently being processed.

In an effort to obtain additional epidemiologic data, a telephone survey was undertaken in the village of Pembroke (population 1,800) early in the course of the epidemic. A random sample was obtained by selecting every eighth entry in the local telephone directory, excluding commercial establishments. Interviews were completed in 58 households, providing information on 265 individuals (approximately 15% of the total population). One adult member of the household usually provided data for all those residing at that household. A standard set of questions was asked at each interview regarding age and sex of all household members, and pertinent clinical data for household members who had been ill during the epidemic. A total of 44 cases were discovered in this sample, giving an overall attack rate of 17%. Age specific attack rates and a quantitative summary of the symptom complex are given in Tables 1 and 2.

An indication of the extent of epidemic spread through the State as a whole through the week ending February 8 is given in the two maps in Figure I.

(Reported by Jacob Koomen, M.D., Assistant Secretary and State Health Director, North Carolina State Board of Health; Dr. George M. Johnson, EIS Officer assigned to the North Carolina State Board of Health; Dr. Carl Silverman, Epidemiology Branch, Communicable Disease Center; and Dr. R. Q. Robinson, Laboratory Branch, Communicable Disease Center).

Table 1

Influenza Age-Specific Attack Rates - Telephone Survey
Pembroke, North Carolina, January 12, 1963

Age Group	No. in Sample	Cases in Sample	Attack Rate for Sample
0-4	25	4	16%
5-14	66	10	15%
15-24	44	9	20%
25-34	26	6	23%
35-49	62	9	15%
50-64	25	4	16%
65 +	17	2	12%
Total	265	44	17%

Table 2

Symptoms of Influenza - Telephone Survey
Pembroke, North Carolina, January 12, 1963

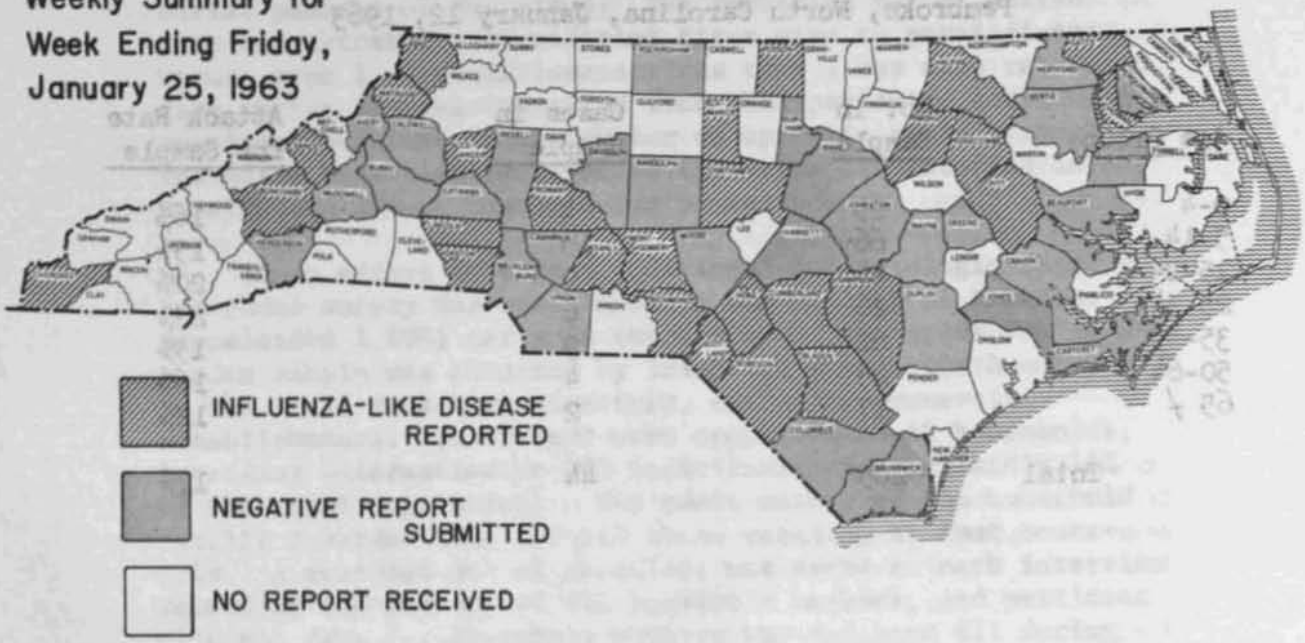
Symptom	Number	Percent
Weakness and fatigue	41	93
Cough (mild)	36	82
Headache	35	79
Feverishness	33	75
Chills or chilly sensation	29	66
Myalgia	28	64
Sore Throat	21	48
Nausea	12	27
Vomiting	11	25
Conjunctivitis (mild)	9	20
Diarrhea	2	4.5

Total Number of Cases - 44

Figure 1.

NORTH CAROLINA -- INFLUENZA EPIDEMIC

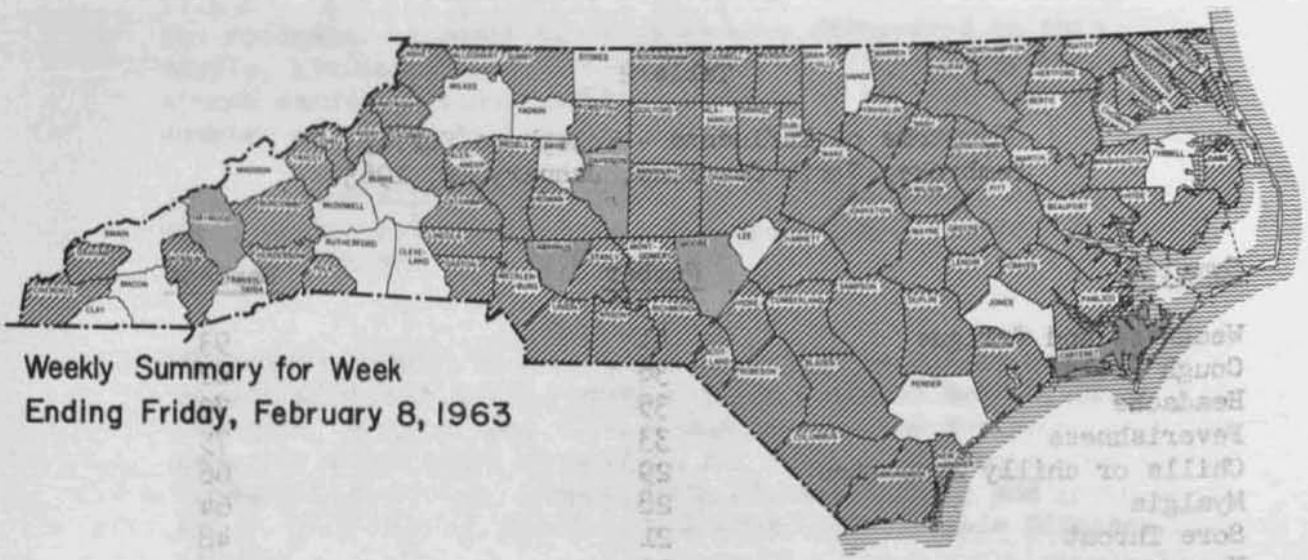
Weekly Summary for Week Ending Friday, January 25, 1963



INFLUENZA-LIKE DISEASE REPORTED

NEGATIVE REPORT SUBMITTED

NO REPORT RECEIVED



Weekly Summary for Week Ending Friday, February 8, 1963

Maryland:

During the first 2 weeks of January, the City of Baltimore began to experience sharp outbreaks of acute febrile respiratory illness. One of the first indications of the possible occurrence of influenza in the city was the appearance of respiratory illness in an increasing proportion of patients seen in the pediatric and adult outpatient clinics at the Johns Hopkins Hospital, characterized by acute onset of chills, fever, and headache with cough, myalgia, and mild coryza of 3--4 days' duration. Influenza A_2 virus was isolated from a patient with symptomatology typical of the syndrome. Figure 2 shows the total number of patients seen at the adult and pediatric emergency outpatient clinics at the Johns Hopkins Hospital by 2-day periods for the month of January. All patients with a sign-out diagnosis of 1, "viral illness", 2, pharyngitis, 3, pneumonia, 4, influenza, 5, URI, 6, cold, are included in the totals.

Concurrently, an outbreak of influenza-like illness was noticed among inmates of the Maryland State Penitentiary in Baltimore. The epidemic began during the early part of the week of January 13 and peaked during the week of the 20th, with a steady decline of cases thereafter. Specific symptomatology was diffuse except for the general presence of fever, headache, and weakness in most cases. The illness was not severe, lasting 3--4 days. A_2 virus was not isolated in this population. However, 9 of 14 paired sera from typical cases showed fourfold or greater titer rises by hemagglutination inhibition test using A_2 305/57 antiserum.

During this same period widespread excess absenteeism was noted in schools in many parts of the city and in Baltimore County. The Baltimore police force, with a strength of 3740 men, had over 300 absentees during the month of January.

In order to more fully assess school absenteeism, the Robert Poole Elementary and Junior High School in central Baltimore was chosen for more intensive study. The school has a total enrollment of 1400 in the age groups 6 through 15. Figure 3 shows school absenteeism for the month of January. Increased absenteeism began about January 14 and reached a peak of over 35% on January 24. On January 26 a sample of 89 children absent on January 25 were contacted by phone. Of the 89, 14 (16%) were absent for reasons unrelated to illness. Sixty-five children (73%) were absent because of illness clinically compatible with influenza. The symptomatology elicited for 35 absent children between the ages of 12 and 15 is given in Table 3.

FIGURE 2.

TOTAL PATIENTS SEEN JOHNS HOPKINS HOSPITAL EMERGENCY ADULT AND PEDIATRIC OUTPATIENT CLINICS FOR ACUTE RESPIRATORY DISEASE & VIRAL ILLNESS - Jan. '63, by 2-day periods

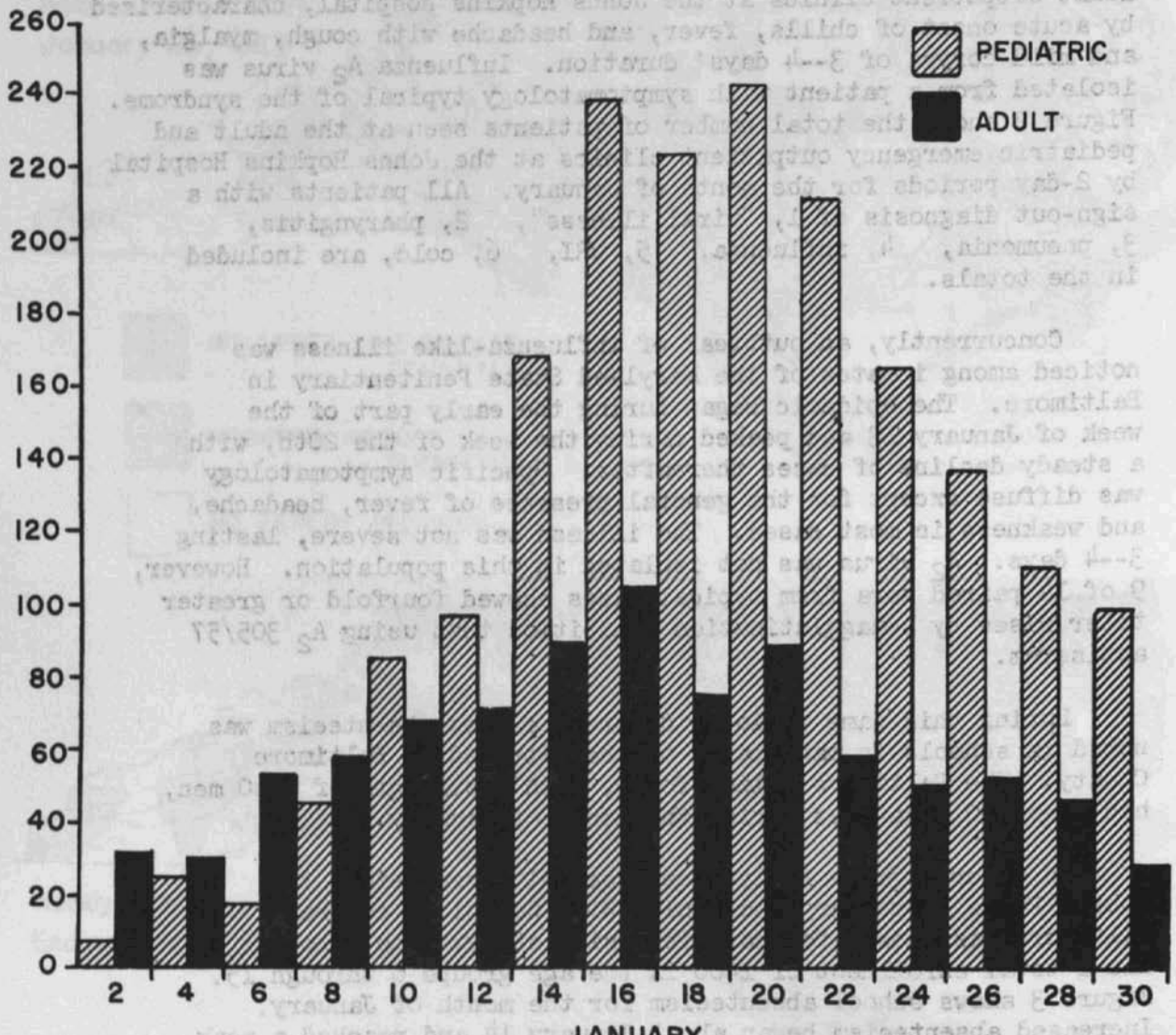


FIGURE 3

ROBERT POOLE ELEMENTARY & JUNIOR HIGH SCHOOL

BALTIMORE INFLUENZA OUTBREAK

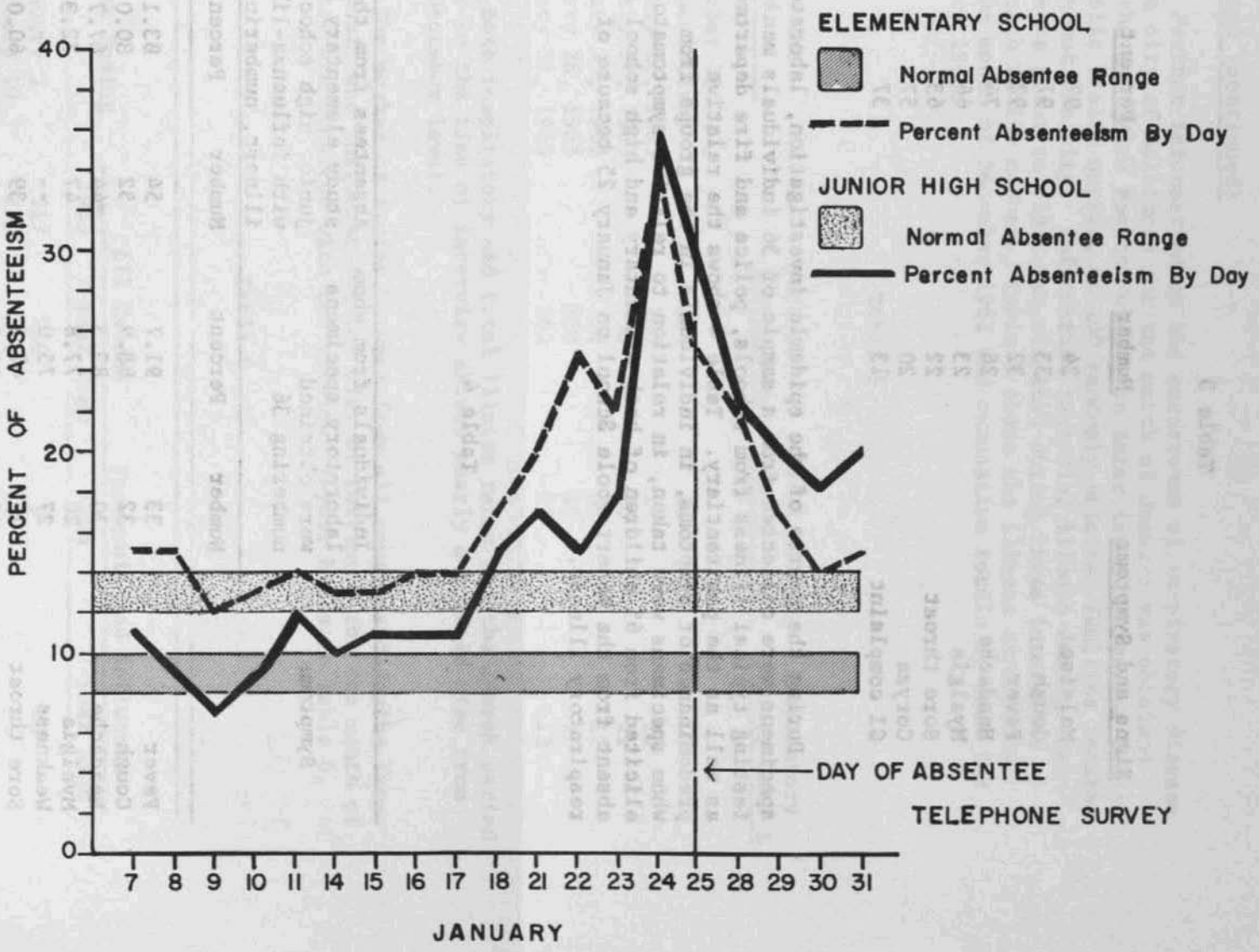


Table 3

Signs and Symptoms	Number	Percent
Malaise	34	97
Cough	33	97
Fever	32	92
Headache	26	74
Myalgia	23	66
Sore throat	22	63
Coryza	20	57
GI complaint	13	37

During the course of the epidemic investigation, laboratory specimens were collected from a sample of 36 individuals manifesting typical illness from schools, police and fire departments, as well as the penitentiary. Table 4 shows the relative predominance of symptoms, in individuals in the groups from whom specimens were taken, in relation to relative symptomatology elicited from 65 children of both elementary and high school age absent from the Robert Poole School on January 25 because of respiratory illness.

Table 4

Symptoms:	Individuals from whom laboratory specimens were obtained numbering 36		Absentees from the study elementary and junior high school with influenza-like illness, numbering 65	
	Number	Percent	Number	Percent
Fever	33	91.7	54	83.1
Cough	32	88.9	52	80.0
Headache	30	83.3	44	67.7
Myalgia	28	77.8	47	72.3
Weakness	27	75.0	--	--
Sore throat	17	47.2	39	60.0
Coryza	16	44.4	--	--
GI complaints	13	36.1	24	36.9

Maryland (continued)

Further information on the occurrence of respiratory disease in the city of Baltimore for the month of January was obtained from the Baltimore Health Survey, an interview on a regular basis by public health nurses, of 100 randomly selected families located throughout the city. Information regarding illness during the two weeks prior to visit was elicited during these interviews from each family member. Table 5 shows the illness experience for the month of December 1962 and cumulative totals by week for January 1963.

Table 5

Interview as of:	Persons Interviewed	Total Illness Rate %	Respiratory Illness Rate %
December 1962 (Cumulative)	296	11	7
January 18, 1963	128	17	10
January 22, 1963	138	18	11
January 23, 1963	158	21	12
January 28, 1963	238	20	11
January 31, 1963	262	21	13

Both respiratory and total illness rates for the 2-week period prior to the time of interview showed nearly a twofold rise from the December level.

The number of deaths by week from all causes and deaths from pneumonia and influenza for the city of Baltimore for the month of January are compared with the previous 7-year highs in Table 6.

Table 6

Week Ending	All Causes		Pneumonia and Influenza	
	1963	7-year High	1963	7-year High
January 3	217	253	9	13
January 10	250	275	12	15
January 17	252	257	10	12
January 24	309	255	15	18
January 31	307	258	27	17

Maryland (continued)

A sharp increase in deaths was noted for the week ending January 10, but it was not until the week ending January 24 that the number of deaths from all causes exceeded the comparable 7-year high.

To date three separate isolations of influenza A_2 virus by the Maryland State Laboratories and the Johns Hopkins Hospital Virus Laboratory have been made from specimens collected in the city of Baltimore. Further laboratory studies are in progress. In addition, family surveys to establish age specific attack rate patterns are in progress.

Increased school absenteeism has been noted in a number of other counties in Maryland. Anne Arundel County reported excess absenteeism during the Baltimore outbreak. Influenza-like illness is also presently widely disseminated throughout Frederick County. Two isolates of A_2 influenza virus have been obtained at Fort Detrick, near the city of Frederick. One isolate was obtained from a civilian with influenza-like illness and the other from an officer.

An analysis of total pneumonia-influenza deaths for the State of Maryland is given in Table 7.

Table 7

Year	Weeks	Deaths/100,000		
		Observed	Prior 5-year Median	Epidemic Threshold
1962	47-50	28.8	26.4	47.8
1962-63	51-2	33.2	35.9	37.6
1963	3-6	59.2	36.7	38.4

(Reported by Dr. John H. Janney, Maryland State Health Department; Dr. Robert E. Farber, Baltimore City Health Department, and a team from the Communicable Disease Center).

Virginia:

An extensive outbreak of influenza-like illness, involving primarily the eastern and central parts of the State, has been in progress since late January.

The epidemic was initially recognized during the week ending January 26, at which time 1,000 new cases were reported to State health officials at Richmond, as compared with previous weekly totals averaging 60--70. The greatest concentration of cases was initially observed in the Richmond metropolitan area where communities in Goochland, Henrico and Caroline Counties were particularly hard hit. School absenteeism in these areas rose from usual levels of about 5% to as high as 18.5% during the week ending January 26.

Other epidemic foci were observed during the ensuing weeks in several rural counties in the southeastern part of the State which border on known sites of epidemic influenza in North Carolina. The city of Newport News also reported an increasing number of cases, as did a number of smaller communities lying between Newport News and the original epidemic focus in Richmond. An additional site of epidemic activity has also been noted in several northern counties adjoining the Washington, D.C. metropolitan area.

Total cases reported by physicians throughout the State rose to 4535 for the week ending February 2, and to 9434 for the week ending February 9. The western portion of the State appears to be the only region spared from community wide epidemics thus far, although a limited outbreak has been reported from the city of Lynchburg, approximately 100 miles west of Richmond.

Serologic confirmation of recent infection with A_2 influenza virus has been obtained in three cases from the Richmond area. Paired sera from each of these patients demonstrated greater than fourfold antibody titer rises to the Asian antigen. Additional specimens have been received at the State laboratories from a number of other parts of the State and are currently being processed.

(Reported by James B. Kenley, M.D., Director, Bureau of Epidemiology Virginia State Department of Health)

Delaware:

Outbreaks of influenza-like disease have recently been observed in four communities in the State of Delaware. Schools serving these areas have noted abnormally high absenteeism during the past two weeks with absence rates varying between 12 and 18%. Industrial absenteeism has not been abnormal thus far. The illness is described as clinically compatible with influenza, although laboratory confirmation has not been obtained.

(Reported by Floyd Hudson, M.D., Acting Director, Preventable Diseases, Delaware State Board of Health).

District of Columbia:

Since the middle of January, Washington has been experiencing an outbreak of influenza-like illness, apparently reaching peak proportions during the week of February 11. During the outbreak, industrial absenteeism showed a slight rise. For the week ending February 9, overall absenteeism in 7 employee groups was 6%, a higher rate than in 1958 or 1960.

Sampling of absentee rates in the public schools has shown an average rate of 11% for the outbreak period to date, with variations from 4 to 18% for individual schools. This represents only a slight increase over rates of absenteeism for nonepidemic years.

Pneumonia-influenza deaths for the District of Columbia have risen steadily during the first 6 weeks of 1963 and show an 80% increase over totals for the same period in 1962 for persons in the age group 45--64, with a 110% increase in persons age 65 and above.

To date there have been 19 separate isolates of A_2 influenza virus obtained from ill individuals living in widely separated areas of the District of Columbia.

(Reported by Dr. Frederick C. Heath, Deputy Director of Public Health, District of Columbia Department of Public Health).

South Carolina:

In Dillon, Chesterfield and Horry Counties, all in the vicinity of the original North Carolina influenza epidemic focus, local physicians have witnessed large amounts of influenza-like illness, severest in school children and in the elderly. The peak of these outbreaks occurred during the last two weeks of January. Two counties in the central part of the State have experienced school absenteeism as high as 30% in the last week. In the city of Columbia, an outbreak of influenza-like illness has been reported from a local nursing home. For the State as a whole, industrial absenteeism has been normal. There have, to date, been no isolations of or serologic titer rises to influenza virus reported from the State. Further laboratory studies are in progress.

(Reported by Dr. G. E. McDaniel, Director, Division of Disease Control, South Carolina State Board of Health, Columbia, South Carolina)

Georgia:

An outbreak of febrile respiratory disease clinically compatible with influenza was observed among students at the University of Georgia in Athens, during late January.

The epidemic was recognized during the period January 22-24 and reached its peak by January 28-30, at which time approximately 150 new cases were seen each day at the University Infirmary. An abrupt decline in the number of patients reporting to the Infirmary was noted on February 1. No significant spread to the surrounding community of Athens has been observed.

Laboratory specimens have been submitted to the Respirovirus Laboratory of the Communicable Disease Center and are currently being processed.

(Reported by W. J. Murphy, M.D., Director, Epidemiology, Georgia State Department of Public Health; and G. B. Creagh, M.D., District Director of Public Health, Athens, Georgia).

Kansas:

A convalescent home in Johnson County, Kansas, experienced an outbreak of febrile respiratory disease which began on January 18. Eleven of 64 elderly residents, most of whom have chronic debilitating disease, developed an illness characterized by acute onset of fever, malaise, headache, myalgia and cough. Hemagglutinating agents were recovered in monkey kidney tissue in three of eight individuals from whom throat washings were obtained. One of these agents has been typed as Asian influenza by both hemagglutination inhibition and hemadsorption inhibition. One of the cases from whom an agent was not isolated expired on January 26.

At the present time there is no evidence to indicate that influenza-like illness has spread to surrounding areas.

(Reported by Dr. Don E. Wilcox, State Epidemiologist, Kansas State Board of Health, Topeka, Kansas and a team from CDC Kansas City Field Station).

Illinois:

U. S. Naval Training Center:
Great Lakes, Illinois

A laboratory confirmed influenza A_2 outbreak has been occurring among newly arrived recruits at the Great Lakes Naval Training Center in Illinois. One hundred forty-six recruits presented with acute febrile respiratory disease during the period January 18--28, these cases having been drawn from a semi-closed population at risk of approximately 1,500. Cases have continued to appear during February at a much slower rate and without evidence of spread to the well immunized population of older recruits. It is of some interest that a number of the cases occurred among recruits arriving from Maryland, site of a recent major influenza outbreak. Clinically, the illness has been acute and relatively mild, being characterized by a maximum fever of 101 to 103, sore throat, cough, and headache. Most cases have required bed rest for 2--4 days.

Illinois (continued)

A_2 isolates were obtained from 17 of 19 cases admitted to the base dispensary on January 21.

(Reported by Commander B. F. Gundelfinger, MC, USN, Head, Communicable Disease Branch, Preventive Medicine Division, U. S. Navy).

Maine:

An influenza-like illness characterized by fever (102-103°), weakness, sore throat, cough and rhinitis, appeared at Colby College in Kennebec County during the fourth week of January. Admissions to the infirmary for this illness rose from 6 on January 25, to 27 on January 30. There was no evidence of spread to the population outside the schools. Laboratory studies have as yet failed to demonstrate an etiologic agent.

(Reported by Dr. Dean H. Fisher, Director, CDC, Bureau of Health, Maine State Department of Health & Welfare, Augusta, Maine).

Vermont:

An outbreak of influenza-like illness lasting 3 to 4 days and characterized by sudden onset of fever, chills, headache, sore throat and myalgia occurred in the town of Island Pond in Essex County during the week of February 4. The illness, which occurred only in a small percentage of townspeople, has not apparently spread to other areas. There have been no influenza isolates or serologic evidence of influenza infection reported to date from the State of Vermont.

(Reported by Dr. L. J. Leavens, Director, Communicable Disease Control, Vermont Department of Health, Burlington, Vermont).

Massachusetts:

An outbreak of febrile respiratory illness clinically resembling influenza has occurred at a college in western Massachusetts. The outbreak began suddenly on Monday, February 11, with approximately 50 cases reporting to the infirmary on Monday and Tuesday. The school has a total enrollment approximating 1000. There has been no evidence of spread of the disease to the surrounding community. Specimens from acute cases have been collected and are presently being processed.

At the present time, surveys of school and industrial absenteeism in the Boston area do not indicate the presence of unusual amounts of respiratory illness.

(Reported by Dr. Nicholas J. Fiumara, Director, Division of Communicable Diseases, Massachusetts Department of Public Health, Boston, Massachusetts).

New York:

The first confirmed isolations of A_2 influenza virus in New York City were made during the week of January 28. To date, eleven A_2 isolates have been reported from the city, 5 of which came from specimens collected during an epidemic of influenza-like illness in a children's institution in Manhattan. Over 100 children in a population of 500 were affected. Pneumonia-influenza deaths for New York City have been well above expected levels during the month of January, with a rather sharp rise for the week ending February 1, as shown in Table 8.

Table 8

Pneumonia-Influenza Deaths
New York City

Week Ending	Tolerance Zone		Expected	Observed
	Upper	Lower		
Dec. 28	55.0	98.8	76.9	75
Jan. 4	55.9	100.1	78.0	101
Jan. 11	55.7	99.9	77.8	102
Jan. 18	54.9	98.7	76.8	94
Jan. 25	53.2	96.4	74.8	102
Feb. 1	51.7	94.5	73.1	121

New York (continued)

In Nassau County, physicians began to see increasing amounts of influenza-like illness during the week of February 4. The illness is characterized by fever, cough, headache and myalgia of 4 to 5 day duration. Paired sera from two sick patients have shown a fourfold or greater titer rise to A_2 305/57 antigen. Two other sera from ill patients have shown high stationary titers to the same antigen.

In Rockland County, an outbreak of influenza-like illness beginning about February 4, has been noted in an institution for mentally retarded children. The institution contains 6,000 patients and 2,500 employees. To date, 1,000 patients and employees have reported ill with febrile respiratory disease. Laboratory studies are presently under way.

(Reported by Dr. Harold T. Fuerst, Director, Bureau of Preventable Disease, New York City Health Department and Dr. Robert Albrecht, Director, Division of Epidemiology, New York State Health Department).

Ohio:

Epidemic febrile respiratory disease, clinically compatible with influenza, has been reported from the cities of Cincinnati, Springfield and Dayton in southwestern Ohio during the week ending February 8.

Four school systems in the Cincinnati area have noted a recent increase in absenteeism attributable to a flu-like illness, with absence rates as high as 25% being reported during the past week. Public health clinics in the city have had an increasing case load of acute upper respiratory disease in both adult and pediatric age groups. Throat washings and acute sera have been obtained from this outbreak and are currently being processed in the State laboratory at Columbus.

Schools serving the city of Springfield have also noted abnormally high absenteeism with rates ranging from 10% to 30%. During the same period, two industrial populations in the city with employees totaling approximately 4,500 reported an increase of absenteeism from usual levels of about 2% to peak levels of 7--16%. Most of this absenteeism was attributed to an influenza-like illness.

A similar illness has been observed in the neighboring city of Dayton where a 15% absentee rate among public school teachers has been reported, as well as abnormally high absenteeism among students.

(Reported by Winslow Bashe, Jr., M.D., Chief, Division of Communicable Diseases, Ohio State Department of Health).

Kentucky:

Extensive outbreaks of a relatively mild influenza-like illness have been reported from several widely separated areas within the State. Earliest reports of epidemic activity were received during the first week of February and consisted largely of physicians' reports. During the following week a sharp increase in school absenteeism was noted, causing school closings in a number of areas.

The city of Louisville and surrounding communities in Jefferson County have reported an estimated 54,000 cases thus far. Public schools serving cities within Jefferson County were closed during the week ending February 15.

Campbell, Boone, and Kenton Counties in northeastern Kentucky have also experienced sharp outbreaks with school absenteeism as high as 17%. These counties all border on the Cincinnati metropolitan area, site of a recent epidemic.

Trigg and Christian counties in the southwestern part of the State, along the Tennessee border, have also reported outbreaks with recent school closings.

Clinically, the illness has been typical of influenza with headache, myalgia, cough and fever of 100--102°. The illness has been rather mild and of relatively short duration, typically lasting only 1--3 days. A small percentage of patients have also complained of nausea and vomiting. State health officials report that the epidemic does not appear to have passed its peak in any of the involved areas thus far.

Throat washings and acute sera have been submitted to the State Laboratories from several affected areas. No results are available as yet.

(Reported by J. Clifford Todd, State Epidemiologist, Kentucky State Department of Health, Frankfort, Kentucky).

West Virginia:

West Virginia has witnessed above seasonal incidence of respiratory disease in the eastern counties of Berkeley, Jefferson, Mineral, Pocahontas, and Upshur beginning during the week of February 4. School absenteeism which normally runs 5--7%, is presently running at 10--12% in most of these areas and at 18% in Mineral County. Local physicians in these areas feel that symptomatology, in many cases, resembles influenza. There have been no isolates of influenza and no serologic evidence of influenza infection from the State of West Virginia to date. Specimens are continuing to be collected and processed.

(Reported by Dr. L. A. Dickerson, Director, Disease Control, West Virginia State Health Department, Charleston, West Virginia.)

III. INTERNATIONAL REPORT

Netherlands:

Twenty cases of influenza-like illness were reported in January from a mental disease institute near Utrecht (WHO Weekly Epidemiological Record, No. 4, January 25, 1963). Hemagglutination inhibition tests on paired sera from two patients showed serologic titer rises to A_2 influenza virus.

A report received at the WHO Influenza Center for the Americas from Prof. J. Mulder, Academisch Ziekenhuis, Leiden, indicates that, during the week of January 20, 1963, foci of influenza were reported from two military units. Five strains of influenza A_2 virus have been isolated. Influenza A_2 virus was also isolated from a case of pneumococcal pneumonia in Leiden. The strains isolated are reported as clearly related to the 1957 A_2 virus.

Great Britain:

Several outbreaks of mild influenza-like illness have been reported from the southern part of England during the month of January. Serologic evidence of influenza virus A infection has been obtained in some of these outbreaks. (Weekly Influenza Statement - 1963, No. 1 - Week ended 2nd February 1963). The number of deaths due to respiratory diseases reported weekly from England and Wales has shown a progressive increase for each week thus far in 1963. During the week ending February 2, the rise became somewhat steeper. Deaths from pneumonia and bronchitis in that week were substantially in excess of those in the corresponding week of 1962.

East Germany:

A laboratory confirmed influenza A_2 outbreak has been reported from the town of Wernigerode, Magdeburg District, German Democratic Republic. Approximately 50 cases of febrile respiratory disease were observed in early January. Influenza A_2 isolates were recovered from three cases at the District Institute of Hygiene in Wernigerode. Isolates have been forwarded to the Prague Institute of Epidemiology and Microbiology for further characterization.

IV. LABORATORY REPORT

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Virus isolation and serodiagnosis. Isolation of type A2 influenza viruses from current cases of illness has been accomplished in embryonated eggs and in primary monkey kidney tissue cultures. Table 9 presents results of isolation attempts from 10 throat swabs collected during the outbreak in Robeson County, North Carolina. From data available at the present time it would appear that embryonated eggs are more sensitive than the monkey kidney tissue culture system. Isolated viruses have been identified readily by the hemagglutination inhibition test (HI) using antiserum prepared against the A2/Japan/305/57 virus. Table 9 also presents results of serodiagnostic tests for the same 10 cases. It will be noted that both the A2/Japan/305/57 and the current strain A2/North Carolina/1/63 (isolated from case No. 008) were adequate for antibody measurement. One of the cases (No. 010) was due to Myxovirus parainfluenza 1, and it is shown by serologic tests that this virus was not a contributing cause of illness in the remainder of cases. Reagents prepared with the A2/Japan/305/57 virus and distributed from the International Influenza Center for the Americas were used for performance of these tests and should be suitable for use during the current season.

Antigenic analysis of current A2 virus. Table 10 presents results of limited study on the antigenic characteristics of current A2 influenza viruses. Antiserum prepared with the A2 North Carolina/1/63 virus is not yet available and interpretation of available data is of necessity provisional. It may be seen that there is some antigenic difference between the A2/Japan/305/57 strain and a relatively recent isolate A2/Yokosuka/5/62 in that four-fold differences in reciprocal cross HI tests are detected in sera prepared with both strains. The current isolate, A2/North Carolina/1/63, while distinctly related to both A2/Japan/305/57 and A2/Yokosuka/5/62, does not detect the homologous titer of sera prepared with either strain. Since A2/North Carolina/1/63 serum is not available it is not known if this strain is fully sensitive to antibody although it is presumed so on the basis of results with human sera presented in Table 9, where practically identical titers are measurable with both antigens in all cases except No. 009. This case could be an initial experience with A2 influenza and is reflecting the antigenic dissimilarity suggested in Table 10.

LABORATORY REPORT (continued)

Table 9

Results of virus isolation attempts and serodiagnostic tests

Case #	Isolation System			Identity	Serum #	HI Serology				
	Eggs	MK	HFK			Jap/305	NC/1/63	Para 1	Para 2	Para 3
001	+	-	-	A2	A	0	0	80	0	160
					C	640	640	40	0	80
002	+	+	-	A2	A	10	20	0	0	20
					C	640	640	0	0	20
003	+	-	-	A2	A	0	0	0	10	40
					C	320	320	0	10	40
004	+	-	-	A2	A	Blood specimens not available				
					C					
005	+	-	-	A2	A	10	10	0	0	160
					C	80	80	0	0	160
006	+	+	-	A2	A	20	20	80	0	160
					C	640	1280	20	0	80
007	+	-	-	A2	A	10	0	0	20	60
					C	640	640	10	20	80
008	+	-	-	A2	A	20	20	20	0	160
					C	320	640	10	0	160
009	+	+	-	A2	A	0	0	0	10	20
					C	20	320	0	10	20
010	-	+	+	Para 1	A	0	0	0	0	40
					C	0	0	160	10	160

MK - Monkey kidney
HFK - Human fetal kidney

A - Acute serum
C - Convalescent serum

LABORATORY REPORT (continued)

Table 10

Antigenic analysis of current Asian Influenza viruses

Ferret antiserum	Antigen		
	A2/Japan/305/57	A2/Yokosuka/5/62	A2/NorthCarolina/1/63
Pre-infection			
A2/Japan/305/57	0	0	0
A2/Yokosuka/5/62	0	0	0
Post infection			
A2/Japan/305/57	320	60	80
A2/Yokosuka/5/62	320	1280	160

V. SUMMARY OF PNEUMONIA AND INFLUENZA DEATHS

During the week ending February 9 there were 705 pneumonia-influenza deaths reported in the 108 cities, an excess of 157 over the expected number of 548. This number of excess deaths is greater than the peak number of 147 excess deaths during the week ending March 3 of the 1962 epidemic of influenza B, but considerably less than the 508 excess deaths during each of the weeks ending February 13 and 20, 1960, the peak of the influenza A_2 epidemic of that year. Recent excess mortality has been greater in the Middle and South Atlantic States with further increases during the week ending February 9, 1963

During the last four weeks the average weekly excess has been 106 deaths, 19 percent above expected levels.

Table 11

Pneumonia-Influenza Deaths in 108 Cities

	Week Ending				4-Week Total	Weekly Average
	1/19	1/26	2/2	2/9		
Observed	637	611	652	705	2,605	651
Expected	541	545	547	548	2,181	545
Excess	96	66	105	157	424	106

Table 12

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: Feb. 9 (107 Cities)	Feb. 2 (108 Cities)	Jan. 26 (108 Cities)	Jan. 19 (108 Cities)	Jan. 12 (108 Cities)	Jan. 5 (108 Cities)
All Divisions	107	705	652	611	637	606	552
New England	14	37	35	28	45	30	42
Mid. Atlantic	17	216	205	181	182	180	154
E. North Central	18	121	121	100	110	139	122
W. North Central	9	50	52	40	47	39	29
S. Atlantic	9	97	67	70	47	46	53
E. South Central	8	51	32	42	43	37	32
W. South Central	13	47	64	70	80	55	51
Mountain	8	36	25	30	33	29	29
Pacific	11	50*	51	50	50	51	40

* The number of deaths given includes estimates for cities not reporting in a given week. The table is corrected for preceding weeks after receipt of late reports.

WEEKLY PNEUMONIA AND INFLUENZA DEATHS