REPORT NO. 76
APRIL 12, 1963

COMMUNICABLE DISEASE CENTER

INFLUENZA

SURVEILLANCE

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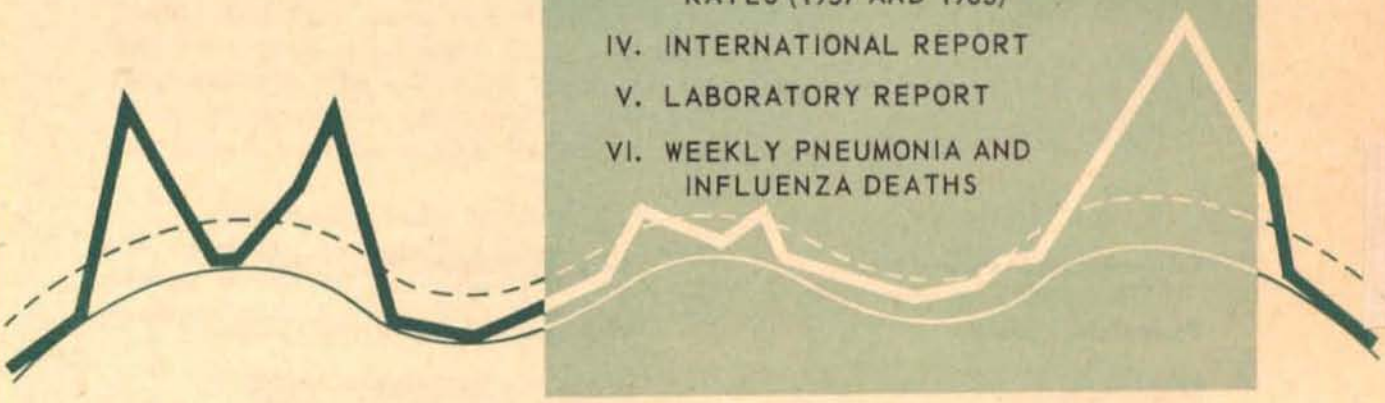

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

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 subsiding in most affected areas in the Eastern and Middle Western United States. Two localized outbreaks, one of them confirmed as influenza A_2, have thus far been reported from northern California. No community-wide outbreaks of influenza-like illness have been recognized in any of the Pacific Coast States to date.

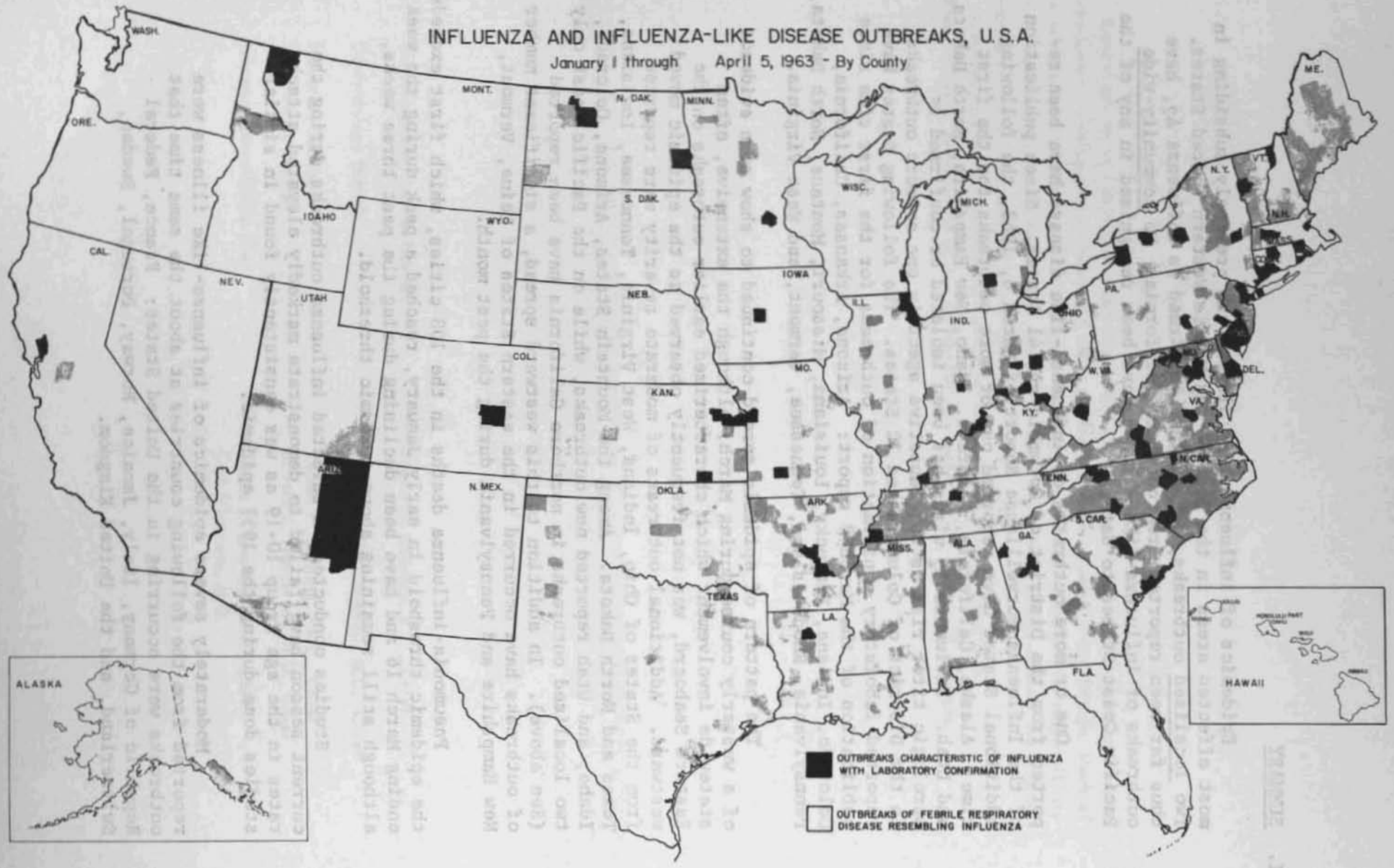
One or more outbreaks of influenza-like disease have been reported from the District of Columbia and 41 States. Since publication of the Influenza Surveillance Report of March 8, 1963, the following additional States have reported one or more outbreaks for the first time: Alaska, California, Colorado, Idaho, New Hampshire, North Dakota, and Utah. Influenza A_2 virus has been isolated or confirmed by serologic titer rise as the causative agent in one or more outbreaks in the District of Columbia and 32 States. The following States have reported laboratory confirmation of outbreaks for the first time since publication of the March 8 report: Arizona, Arkansas, California, Colorado, Indiana, Kentucky, Louisiana, Missouri, Montana, North Dakota, Pennsylvania, Rhode Island, Tennessee, Vermont, and West Virginia.

The pattern of epidemic spread continued to show some evidence of a westerly course during March, although the extensive, often statewide involvement which characterized earlier outbreaks on the Eastern Seaboard, was not frequently observed as the epidemic moved westward. Additional outbreaks of moderate severity were reported from the States of Ohio, Indiana, West Virginia, Tennessee, Louisiana, Texas and North Dakota. Among the Mountain States, Arizona, Colorado, Idaho, and Utah reported new outbreaks, while on the Pacific Coast only two localized outbreaks in northern California have been reported (See above). In addition to this westward spread, a significant number of outbreaks have occurred in the eastern States of Maine, Vermont, New Hampshire and Pennsylvania during the past month.

Pneumonia-influenza deaths in the 108 cities, which first exceeded the epidemic threshold in early January, reached a peak during the week ending March 16 and have been declining during the past three weeks, although still remaining above epidemic threshold.

Studies conducted on selected influenza outbreaks during the current season have failed to demonstrate markedly elevated attack rates in the age group 10-19 as was consistently found in similar studies done during the 1957 epidemic.

Moderately severe epidemics of influenza-like illness were reported from the following countries at about the same time that outbreaks were occurring in the United States: France, Federal Republic of Germany, Italy, Jamaica, Norway, Portugal, Sweden, Switzerland, and the United Kingdom.


INFLUENZA AND INFLUENZA-LIKE DISEASE OUTBREAKS, U.S.A.
January 1 through April 5, 1963 - By County
WASH.
ORE.
CAL.
NEV.
IDAHO
MONT.
WYO.
UTAH
COL.
ARIZ.
N. MEX.
N. DAK.
S. DAK.
NEB.
KAN.
OKLA.
TEXAS
MINN.
IOWA
MO.
ARK.
LA.
WISC.
ILL.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
GA.
FLA.
S. CAR.
N. CAR.
VA.
W. VA.
PA.
N.Y.
VT.
N.H.
ME.
MASS.
CONN.
R.I.
DEL.
ALASKA
HAWAII
OUTBREAKS CHARACTERISTIC OF INFLUENZA WITH LABORATORY CONFIRMATION
OUTBREAKS OF FEBRILE RESPIRATORY DISEASE RESEMBLING INFLUENZA

II. EPIDEMIC REPORTS

Alaska:

An increased incidence of acute respiratory disease was noted in the city of Juneau, beginning during the first week in March. A moderate increase in industrial absenteeism was noted during the epidemic period with only a slight increase in school absenteeism.

(Reported by E. O. Wicks, M.D., Division of Public Health, Alaska Department of Health and Welfare).

Arizona:

Type A_2 influenza virus has been confirmed as the etiologic agent in recent outbreaks occurring in Apache and Navajo Counties (Influenza Surveillance Report No. 75). Epidemiologic studies conducted in these areas included family surveys of two villages in the area of Second Mesa on the Hopi Indian Reservation, Navajo County. The overall attack rate for 317 people surveyed was 31 percent. Age specific attack rates for this outbreak, as well as several others surveyed this year, are given in a later section of this report.

Additional outbreaks of influenza-like illness were reported in mid-March from Tucson in Pima County and from several Indian communities in Gila County in the central part of the State.

(Reported by Dr. W. S. Baum, Area Medical Officer in Charge, Public Health Service, Division of Indian Health, Phoenix, Arizona, and Lloyd N. Farner, M.D., Commissioner of Public Health, Arizona State Department of Health).

Arkansas:

Outbreaks of influenza-like illness have now been reported from 28 of the State's 75 counties. No new counties have become involved since the week ending March 23. Influenza A_2 virus has been confirmed as the etiologic agent in outbreaks occurring in Jefferson and Pulaski Counties in the central part of the State.

(Reported by J. T. Herron, M.D., and William L. Bunch, Jr., M.D., Arkansas State Health Department).

California:

Two localized outbreaks, one of them confirmed as influenza A_2, were reported from communities in northern California during the latter half of March. The first of these involved a State hospital in San Joaquin County where about 200 patients out of a total population of

California (continued)

3500 became ill, beginning about March 17. The illness was characterized by the acute onset of fever, cough, and myalgia of 2-4 days' duration. All patients in residence last fall were given 0.1 cc polyvalent influenza vaccine intracutaneously. A hemmagglutinating agent, not yet identified as influenza virus, has been recovered from two patients. An outbreak of a similar illness began at about the same time in a home for aged war veterans located in Yountville, Napa County, about 50 miles north of San Francisco. Approximately 100 cases occurred in a population totaling over 2000. Paired sera obtained from three of these patients demonstrated significant titer rises to influenza A_2 antigen. Most of the residents at the home were also vaccinated. The low attack rates and small number of deaths in these instances despite the multitude of aged and infirm persons may possibly have been a result of vaccination.

No significant spread to the surrounding community has been observed in either of the two localized outbreaks reported in the State thus far.

A total of 25 serologically confirmed, sporadic cases have been reported from 12 counties in California to date. In addition influenza A_2 virus has been recovered from a single sporadic case in Los Angeles. No community-wide epidemics of influenza-like illness have been observed in the State thus far this year.

(Reported by Dr. Philip K. Condit, Chief, Bureau of Communicable Diseases, California Department of Public Health).

Colorado:

A delayed report of a localized outbreak of laboratory confirmed type A_2 influenza, occurring in the central part of the State, has recently been received. An estimated several hundred cases occurred among troops at a large military base in El Paso County during the first two weeks of February. The outbreak did not spread to involve civilian employees on the base or the residents of surrounding communities. Influenza A_2 virus has been recovered from throat washings obtained in five cases.

(Reported by Dr. C. S. Mollohan, Chief, Epidemiology, Colorado State Department of Health).

Georgia:

Previously reported outbreaks of influenza-like illness (Influenza Surveillance Reports Nos. 74 and 75) are currently subsiding in most affected areas of the State. Serologic confirmation of influenza A_2 infection was obtained in 5 of 7 sets of paired sera obtained from the clinics of the Grady Memorial Hospital in Atlanta. Serologically confirmed cases have also been reported from Bibb, Floyd, and Pierce Counties.

Georgia (continued)

A survey of daily absenteeism in selected schools was conducted by health officials in DeKalb County during the period February 4 through March 15. (DeKalb is one of several counties comprising the Atlanta metropolitan area). A definite increase in absenteeism was observed in all schools surveyed during the period from mid-February through mid-March, with peaks being reached on or about February 22 (See Figure 1). School administrators indicated that much of this absenteeism was due to upper respiratory and flu-like illness. A systematic survey of absentees for cause of absence was undertaken in only one high school and indicated an influenza-like illness as responsible in 49 of 50 students queried. (Influenza Surveillance Report No. 75).

Seven physicians (general practitioners and pediatricians) representing different geographic sections of the county were interviewed daily during the period February 20 through March 15 and queried regarding the number of new cases of influenza-like illness they were seeing each day. A sharp peak in total case load was seen on February 25 (Figure 1) followed by a gradual decrease thereafter. This pattern corresponds well with that observed in the school absenteeism survey and agrees generally with the epidemic curve constructed from emergency clinic visits to the Grady Memorial Hospital for influenza-like illness (Influenza Surveillance Report No. 75).

(Reported by W. J. Murphy, M.D., Director, Epidemiology, Georgia Department of Public Health; T. O. Vinson, M.D., Director, and Marion Dressler, M.D., Assistant Health Officer, DeKalb County Health Department).

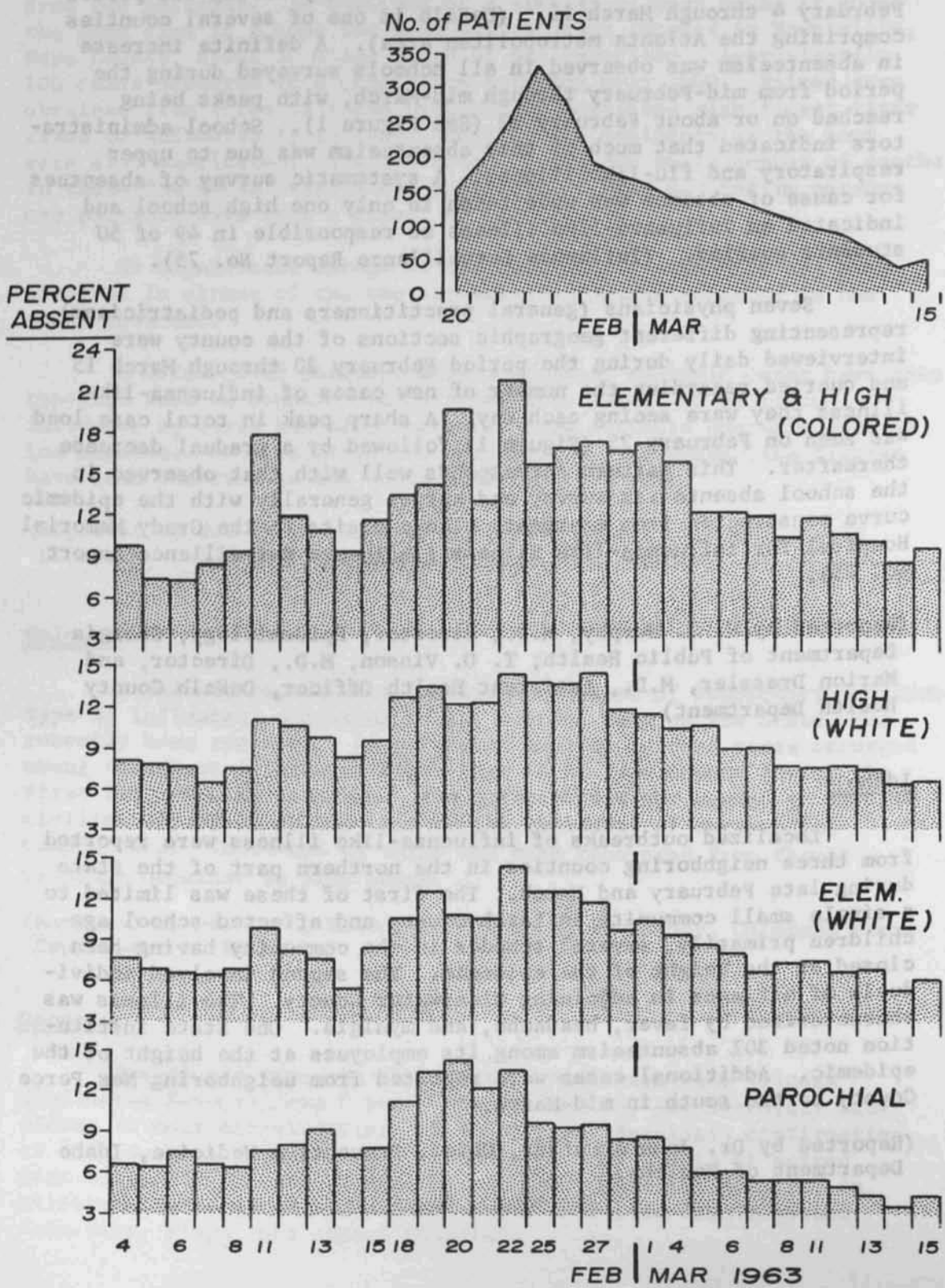
Idaho:

Localized outbreaks of influenza-like illness were reported from three neighboring counties in the northern part of the State during late February and March. The first of these was limited to a single small community in Latah County and affected school age children primarily, several schools in the community having been closed at the height of the epidemic. The second involved individuals of all ages in adjoining Clearwater County. The illness was characterized by fever, headache, and myalgia. One State institution noted 30% absenteeism among its employees at the height of the epidemic. Additional cases were reported from neighboring Nez Perce County to the south in mid-March.

(Reported by Dr. John A Mather, Chief, Preventive Medicine, Idaho Department of Health).

FIGURE I

INFLUENZA-LIKE ILLNESS SEEN BY SEVEN PHYSICIANS and ABSENTEEISM IN SELECTED SCHOOLS DEKALB COUNTY, GEORGIA



Indiana:

A small community outbreak of laboratory confirmed type A_2 influenza occurred in Johnson County in central Indiana during late February and early March. The disease was described as somewhat milder than that of previous Asian influenza epidemics. The outbreak was not accompanied by unusual school absenteeism. Four of six sets of paired sera obtained from typical cases demonstrated significant titer rises to the Asian antigen. One additional sporadic case, from Wells County, in the northeastern part of the State has recently been confirmed serologically as influenza A_2.

(Reported by Dr. A. L. Marshall, Jr., Director, Division of Communicable Disease Control, Indiana State Board of Health).

Kentucky:

Outbreaks of influenza-like illness have now subsided in most affected areas of the State. A total of 46 of the State's 120 counties reported one or more such outbreaks during the recent epidemic season. Laboratory studies have confirmed type A_2 influenza virus as the etiologic agent in two or more cases from Jefferson (City of Louisville), Trigg and Trimble Counties.

(Reported by Dr. William H. McBeath, State Epidemiologist, Kentucky State Department of Health).

Louisiana:

The epidemic appeared to have passed its peak by mid-March at which time 21 of the State's 64 parishes had reported one or more outbreaks. Reports appeared to be clustered in the northwest and central parts of the State, with only a few southeastern parishes involved. Influenza A_2 virus was confirmed as the etiologic agent of outbreaks in Jackson Parish in the northern part of the State where five virus isolates were obtained.

(Reported by John M. Bruce, M.D., Chief, Section of Epidemiology, Louisiana State Board of Health).

Maine:

Eleven of Maine's 16 counties had reported one or more outbreaks of influenza-like illness by the end of March. The southern half of the State appeared to experience the earliest significant involvement with outbreaks in the more northerly counties following one to two weeks later. School closings were reported from York and Penobscot Counties as well as from the city of Lewiston in Androscoggin County.

(Reported by Mrs. Margaret H. Oakes, Maine Department of Health and Welfare).

Michigan:

Outbreaks affecting several communities in Michigan's lower peninsula were reported during February and March, the northwestern part of the State having been spared throughout that time. Among the areas particularly hard hit were the cities of Lansing (where influenza A_2 virus was isolated in six cases) and Detroit.

(Reported by George H. Agate, M.D., Epidemiologist, Michigan Department of Health).

Mississippi:

Epidemics of influenza-like disease were first observed in mid-February and appeared to reach their peak some time in early March. One or more significant outbreaks have been reported from 23 of the State's 82 counties to date. Earliest reports came from areas in the northwestern part of the State adjacent to sites of previous outbreaks in Arkansas and Tennessee. Subsequent reports have come from all geographic regions within the State.

(Reported by Durward L. Blakey, M.D., Director, Preventable Disease Control, Mississippi State Board of Health).

Missouri:

Type A_2 influenza virus has been confirmed as the etiologic agent of an outbreak reported in late February from a military base in Jackson County (Influenza Surveillance Report No. 75). An additional laboratory confirmed outbreak was reported from Greene County in the southern part of the State in mid-March. Epidemic respiratory disease has clearly been waning for the State as a whole since that time, however.

(Reported by E. A. Belden, M.D., Communicable Disease Consultant, Missouri Department of Health).

Montana:

The outbreak of acute febrile respiratory disease reported from Eureka, Lincoln County, in February (Influenza Surveillance Report No. 75) has been confirmed serologically as influenza A_2 in two cases. An additional outbreak was reported in mid-March from a single community in Deer Lodge County in the western part of the State. Laboratory specimens are still under study. Serologic confirmation of recent influenza A_2 infection was obtained, however, in two sporadic cases recently seen in Big Horn County in the southern part of the State.

(Reported by Dr. Mary E. Soules, Director, Disease Control, Montana State Board of Health).

New Hampshire:

Seven counties in southern New Hampshire reported outbreaks of influenza-like illness during the week ending March 16. Four of these counties were adjacent to sites of previous outbreaks in the neighboring States of Maine and Vermont. Earliest cases were observed during the first week of March, the epidemic having reached its peak by the middle of the month. Cases were relatively mild clinically, causing moderate increases in school absenteeism in several areas.

(Reported by Dr. William Prince, Bureau of Communicable Disease, New Hampshire State Health Department).

North Dakota:

Outbreaks of influenza-like illness have recently been reported from six counties representing widely separated geographic regions within the State. Case reports seemed to indicate a peak of epidemic activity during the week ending March 23 for all areas involved, with clear evidence that outbreaks have been subsiding since then. Serologic confirmation of recent infection with influenza A_2 virus has been obtained in two or more cases from Cass and Ward Counties.

(Reported by Kenneth Mosser, Director, Division of Preventable Diseases, North Dakota State Department of Health).

Ohio:

Previously described outbreaks in the cities of Cincinnati, Springfield and Dayton (Influenza Surveillance Report No. 74) began to show clear evidence of subsiding by mid-March. Additional reports were subsequently received from many communities, predominantly in southern Ohio. These outbreaks are also well past their peak at present. In all, 28 of the State's 88 counties reported one or more outbreaks, nineteen of these 28 counties lying in the southern half of the State. Type A_2 influenza virus has been confirmed as the etiologic agent in six counties. Increased pneumonia-influenza mortality was reported from the cities of Canton, Cincinnati, Cleveland, and Toledo during February and early March.

(Reported by Dr. Winslow Bashe, Division of Communicable Disease, Ohio Department of Health).

Pennsylvania:

Seventeen counties, representing most geographic regions within the State, reported one or more outbreaks of influenza-like illness during late February and March. School age children were heavily

Pennsylvania (continued)

involved in some areas, with absentee rates reaching 35-40% at the height of the epidemic. Other areas, notably Allegheny County (part of the Pittsburgh metropolitan area) observed no abnormal school absenteeism or other striking indices of epidemic activity but, nevertheless, reported 32 influenza-pneumonia deaths for the week ending March 9, this being the highest number recorded for any week during the past six years. Type A_2 influenza has been confirmed as the etiologic agent of outbreaks in two southeastern counties. Serologic confirmation of influenza A_2 infection has been reported in 20 sporadic cases from Philadelphia County. No community-wide outbreaks have occurred in that county, however.

(Reported by W. D. Schrack, Jr., M.D., Division of Communicable Disease Control, Pennsylvania Department of Health).

Tennessee:

The previously described statewide outbreak (Influenza Surveillance Report No. 75) reached its peak during the week ending March 9. All but 14 of the State's 95 counties ultimately became involved. Type A_2 influenza was confirmed as the etiologic agent in Shelby and Davidson Counties. The pattern of epidemic spread and the relative degrees of involvement in several areas, are given in Figure 2.

(Reported by Cecil B. Tucker, M.D., Director, Division of Preventable Diseases, Tennessee Department of Health).

Texas:

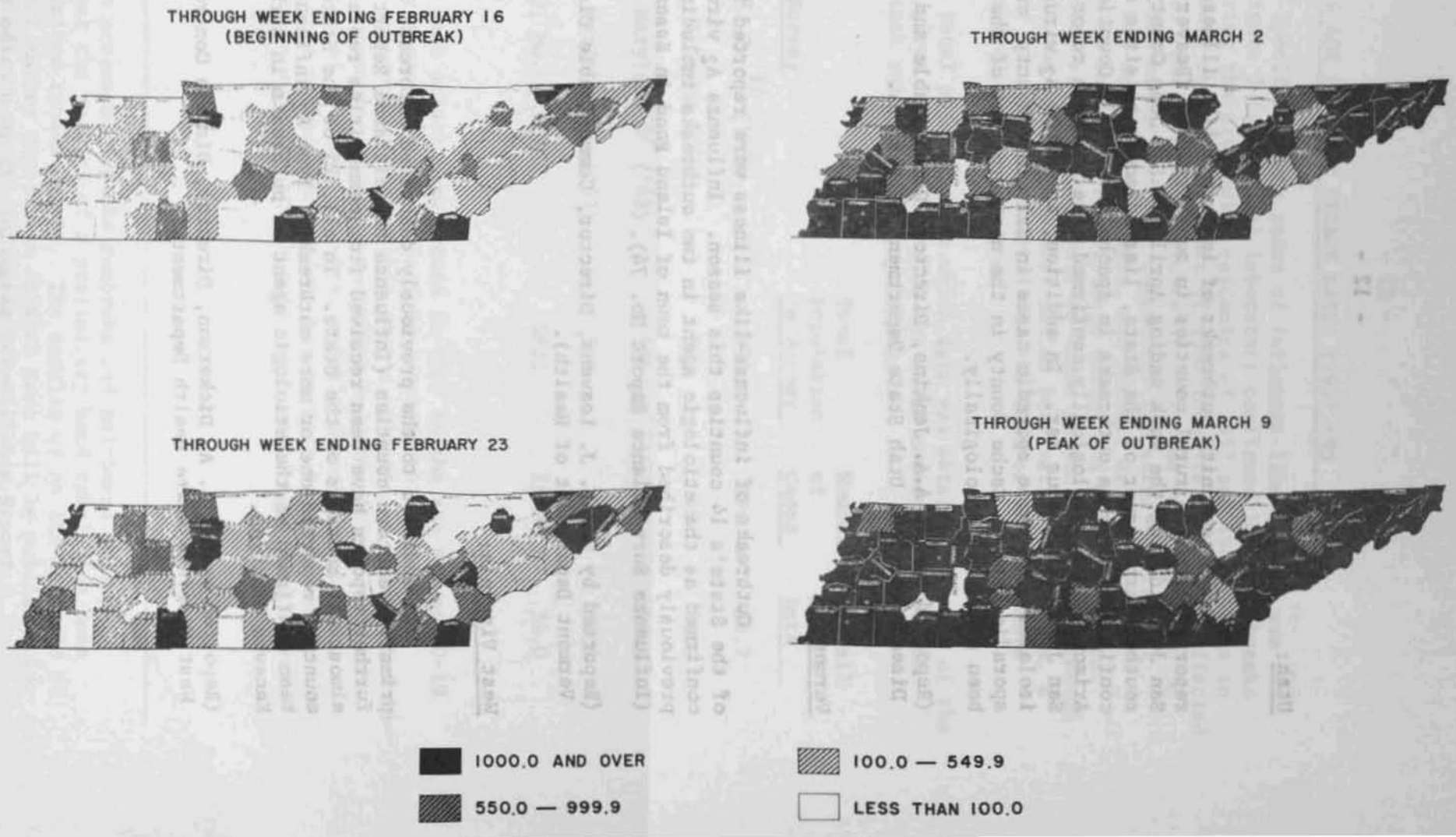
Scattered reports of community-wide outbreaks were received from 21 Texas counties during late February and early March. Outbreaks were clustered in two major areas--one in the southeastern corner of the State and a second in the Panhandle. Single A_2 virus isolates have been obtained in each of three counties to date. Outbreaks of influenza-like illness have been reported from only one of these areas, however, (Travis County), the other isolates having been obtained from sporadic cases.

(Reported by Dr. Van C. Tipton, Director, Communicable Disease Division, Texas State Department of Health).

FIGURE 2

INFLUENZA CASE RATES PER 100,000 POPULATION, BY COUNTY OF TENNESSEE, JANUARY 5 — MARCH 9, 1963

(CUMULATIVE RATES AS OF FOUR DATES)



Utah:

Small community outbreaks of influenza-like illness were reported from two rural counties in southern Utah (Beaver and San Juan) during the week ending April 6. San Juan County, in the southeastern corner of the State, lies adjacent to sites of recent confirmed influenza outbreaks in Apache and Navajo Counties in Arizona. One serologically confirmed case has been reported from San Juan County thus far. In addition, influenza A_2 virus has been isolated from three sporadic cases in Salt Lake County, and one sporadic case in Cache County in the northern part of the State has been confirmed serologically.

(Reported by Dr. A.A. Jenkins, Director, Communicable and Chronic Disease Section, Utah State Department of Health).

Vermont:

Outbreaks of influenza-like illness were reported from 12 of the State's 14 counties this season. Influenza A_2 virus was confirmed as the etiologic agent in two outbreaks including one previously described from the town of Island Pond in Essex County (Influenza Surveillance Report No. 74).

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

West Virginia:

In addition to the previously described outbreaks involving primarily eastern counties (Influenza Surveillance Report No. 74), further reports have been received from communities representing almost all sections of the State. In all, 25 of the State's 55 counties reported one or more outbreaks. Type A_2 influenza has been confirmed as the etiologic agent of outbreaks in Berkeley and Kanawha Counties.

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

III. COMPARATIVE AGE SPECIFIC ATTACK RATES (1957 AND 1963):

Age specific attack rates of influenza-like illness are given in Figure 3 for several laboratory confirmed local outbreaks studied during the nationwide epidemics of 1957 and 1963. Data in each case were obtained by means of questionnaire surveys of affected populations. The clinical features of influenza were described in a standardized manner and each respondent was asked to list all members of his family, their ages, and whether or not each had experienced an influenza-like illness during the epidemic period. In most instances the respondent, or index person, was a high school student. In the case of the Hopi Indian Reservation in Arizona, a door to door survey was conducted and the head of the household generally served as index person.

The total population on which data was obtained in each of the surveys is given below, along with the total number of cases and overall attack rate for each population:

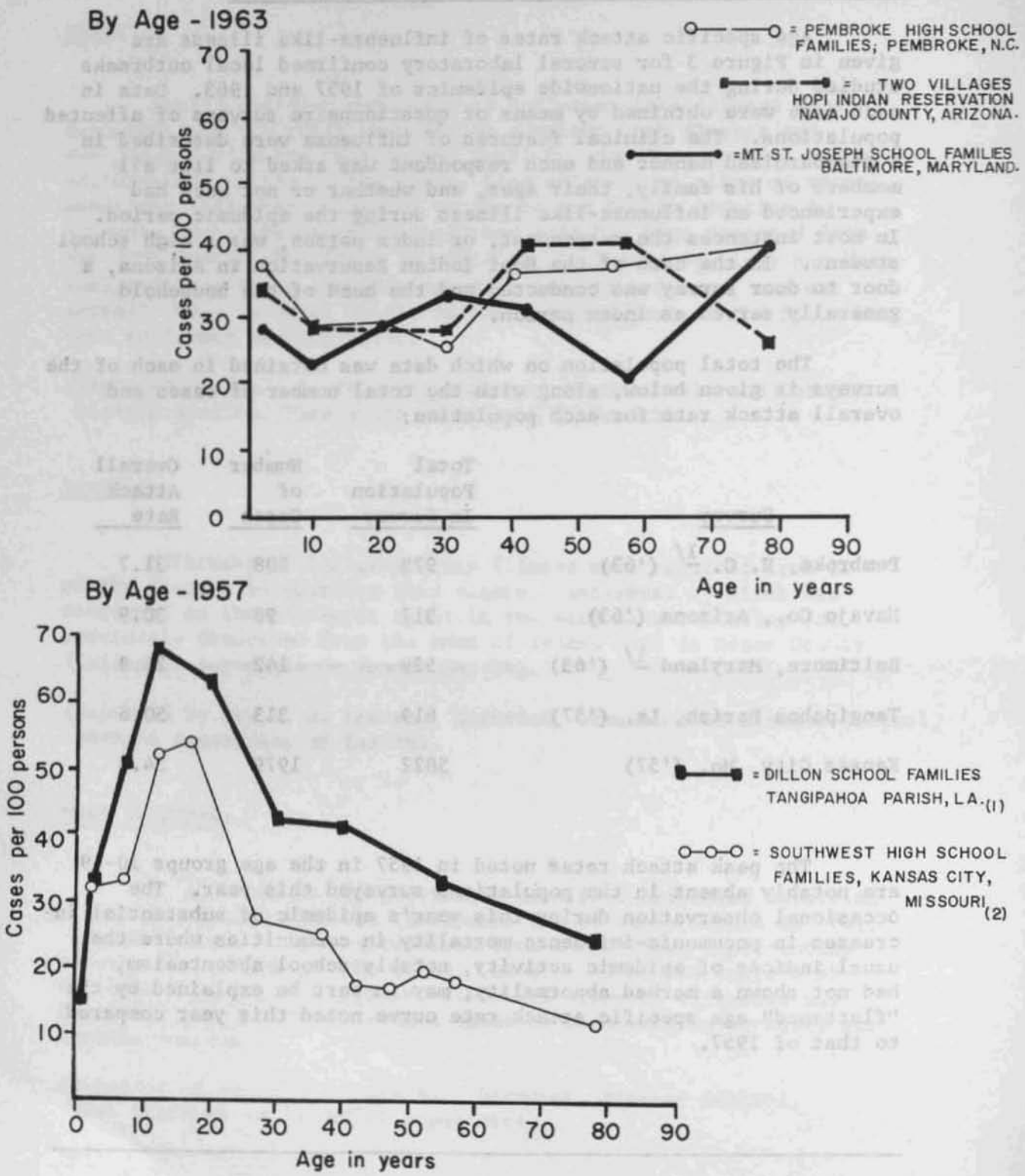
Survey	Total Population In Survey	Number of Cases	Overall Attack Rate
Pembroke, N. C. 1/ ('63)	973	308	31.7
Navajo Co., Arizona ('63)	317	98	30.9
Baltimore, Maryland 1/ ('63)	529	142	26.9
Tangipahoa Parish, La. ('57)	619	313	50.6
Kansas City, Mo. ('57)	5822	1979	34.0

The peak attack rates noted in 1957 in the age groups 10-19 are notably absent in the populations surveyed this year. The occasional observation during this year's epidemic of substantial increases in pneumonia-influenza mortality in communities where the usual indices of epidemic activity, notably school absenteeism, had not shown a marked abnormality, may in part be explained by the "flattened" age specific attack rate curve noted this year compared to that of 1957.

1/ Figures presented for the Pembroke and Baltimore Surveys represent the results of a preliminary hand tabulation done on a limited random sample. The results of an IBM analysis of the total survey population in each case will be published in a later edition of the Influenza Surveillance Report.

FIGURE 3

INCIDENCE OF INFLUENZA-LIKE ILLNESS



1. Dunn, F. L., Carey, D. E., Cohen, A., and Martin, J. D.; Epidemiologic Studies of Asian Influenza in a Louisiana Parish, Am. J. Hyg., 70:251-271, 1959.

2. Chin, T. D. Y., Foley, J. F., Doto, I. L., Gravelle, C. R., and Weston J.; Observations on Morbidity and Mortality characteristics of Asian Influenza, Pub. Health Rep., 75:149-58, 1960.

IV. INTERNATIONAL REPORT:

France:

A markedly increased incidence of influenza-like illness was noted in the city of Lyons during January, February, and early March. Excessive absenteeism was observed among municipal employees and secondary school students. Specific localized outbreaks were reported from one hospital in Lyons, from another at Valence and from an old peoples' home at St. Etienne. During the epidemic period, serologic confirmation of influenza A_2 infection was obtained in 28 patients in Lyons, 4 in Grenoble, and 1 each in Valence and St. Etienne.

The Pasteur Institute reported extensive outbreaks of influenza-like illness in the Paris area during the first two weeks of March. The disease was described as generally mild. Influenza A_2 infection was confirmed by isolation or serologic titer rise in several cases.

Federal Republic of Germany:

Some outbreaks of influenza-like disease were reported from Frankfurt-am-Main, beginning in early February. Attack rates as high as 30-40% were observed among transportation and hospital workers, as well as among teachers. Most cases were said to have occurred among adults. Serologic evidence of influenza A_2 infection was obtained in many cases. The virus was isolated from at least two patients, one of whom had a laboratory confirmed Asian influenza infection in 1957. Other outbreaks occurred during January and February in the Ruhr (Essen, Mülheim), and in the north of Hess. An increased incidence of febrile respiratory disease was noted in West Berlin, beginning in mid-January and reaching a peak in mid-February. By early March, incidence was again at usual levels. Serologic evidence of influenza A_2 infection was obtained in a few cases but it was not thought to be the principal agent involved in these illnesses.

Norway:

An increased incidence of influenza-like illness, attributed to type A_2 virus, was seen in Rogaland, beginning in early February.

Portugal:

Clinically mild outbreaks of influenza-like disease were reported from communities in all sections of the country, beginning in late February. The epidemic was clearly waning by the third week of March. Attack rates seemed to be highest among school children. One strain of influenza A_2 virus was isolated at the WHO Influenza Center in Lisbon. Serologic confirmation was obtained in several additional cases.

Sweden:

Scattered outbreaks of a mild flu-like respiratory disease have been noted since mid-February. The central section of the country appeared to be most severely affected, particularly the towns of Gothenburg, Eskilstuna, and Orebro, as well as a few military units. Serologic evidence of influenza A_2 infection was obtained in some of these outbreaks.

Switzerland:

The incidence of influenza-like disease was first noted to increase in early February and by the first week in March had involved almost all cantons--especially those in the eastern part of the country. The epidemic was clearly on the decline by the end of March. Influenza A_2 isolates were obtained at the Institute of Public Health in Basel and at the Hygiene Institute in Bern.

United Kingdom:

Outbreaks of relatively mild influenza-like respiratory disease have been reported from several areas in the United Kingdom. During February, reports came largely from southern England where 5 A_2 virus isolates had been obtained and many additional cases proved serologically. A number of isolates and serologic confirmations were also obtained from outbreaks in the Glasgow area. During the first two weeks of March, northern England appeared to be accounting for most outbreaks, while the earlier epidemics in London and the southeast, as well as that in Glasgow, were clearly improving. Weekly deaths attributed to influenza rose above figures for the comparable period in 1962 during the week ending February 9 and reached a peak during the week ending March 16. (This was the same week that influenza-pneumonia deaths in the United States reached their peak level). Totals for March 1963 compared to those for the comparable period in 1962 are given below:

Week Ending:	Influenza Deaths 1963	Influenza Deaths 1962
March 2	272	49
March 9	440	48
March 16	464	44
March 23	312	43
March 30	216	45

(Reported in the Weekly Epidemiological Record of the World Health Organization, Nos. 8-13, 1963).

Italy:

Outbreaks of influenza-like disease have been reported from 41 of Italy's 92 provinces during the period December 1, 1962 through February 28, 1963. The greatest number of cases occurred in the provinces of Pescara, Matera, Agrigento, Sondrio, Perugia, Vercelli, Grosseto and Florence. Physicians reported mild symptoms, generally lasting 3-4 days. Industrial absenteeism remained at about 4-5 percent (a very slight increase compared to inter-epidemic periods).

Influenza A_2 virus has been isolated or confirmed by serologic titer rise as the causative agent of outbreaks in the provinces of Genova, Rome, and Bari.

(Reported by Prof. L. Bevere, Ministero della Sanita, Roma, Italia).

Jamaica:

Outbreaks of influenza-like illness have been occurring throughout Jamaica for the past 5-6 weeks. The epidemic has probably now passed its peak. No unusual school absenteeism was observed, and the illness appeared to affect primarily adult populations. Influenza A_2 virus has been isolated at the WHO Influenza Reference Laboratory, in the Department of Microbiology, University College of the West Indies, Kingston.

(Reported by Dr. A. A. Peak, Chief Medical Officer, Ministray of Health, Jamaica; and Dr. Louis Grant, Department of Microbiology, University College of the West Indies, Kingston, Jamaica).

V. LABORATORY REPORT

Roslyn Q. Robinson, Ph.D.
Chief, Respirovirus Unit and
International Influenza Center
for the Americas
Virology Section, Laboratory
Branch
Communicable Disease Center

Virus Isolation. In this laboratory, ten day old embryonated eggs have been found superior to tissue culture systems for the isolation of currently prevalent Asian influenza viruses. Specimens have routinely been inoculated simultaneously into embryonated eggs and monkey kidney, human fetal kidney and human fibroblast tissue cultures. Of 20 specimens yielding Asian influenza virus in embryonated eggs only 2 were positive in monkey kidney tissue culture. In no case was there an isolate obtained in either the human fetal kidney or human fibroblast tissue culture system. In addition, no specimens yielded influenza virus in tissue culture which were negative in embryonated eggs.

Antigenic Variation. The following interesting report on antigenic variation of currently prevalent influenza viruses was submitted by Lt. Col. E. L. Buescher and Capt. H. L. Weinberger of the Department of Virus Diseases at the Walter Reed Army Institute of Research, Washington, D. C.

Preliminary Antigenic Analysis of Newly Recovered Type A Influenza Viruses

"Influenza viruses have now been recovered in embryonated eggs from sampled outbreaks in Washington, D. C., Fort Bragg, N. C., Fort Dix, N. J., Fort Jackson, S. C. and Martinsburg, W. Va. between 25 January and 7 March 1963.

"To date 35 of 39 strains tested have been shown to be related to A_2 virus by hemmagglutination inhibition with antisera prepared to strain A/Japan/305/57. That the current strains are different from the older Asian strains is suggested by reciprocal HI tests. In repeated tests newly recovered viruses are regularly inhibited by rooster antisera to 1957 Asian strains, whereas similarly prepared antisera to 1963 viruses react weakly, if at all, with the two 1957 viruses tested. (Table I). This observation prompted a more complete analysis using antigens and rooster antisera to earlier occurring A strains. A summary of the two tests in which this was done is presented in Table II.

"These data suggest that newly recovered strains are more closely related to A/Japan/170/62 than to other A strains, including the 1957 Asian viruses."

While minor antigenic variation has been observed in tests performed at the International Influenza Center for the Americas, the sharp differences described above have not been detected. However, virus strains and serum production methods used in the two laboratories were not the same.

Vaccine Effectiveness. Reports concerning the effectiveness of vaccination in protecting against infection have not been uniform in their interpretation. In some studies it would appear that vaccination offered little protection against infection while other studies indicate that currently available vaccine offered quite adequate protection. Reports supporting the former viewpoint are lacking in adequate laboratory data while data collected in this laboratory tend to support the latter conclusion.

A vaccination study to determine the relative effectiveness in antibody production was conducted in children using 100 CCA units of monovalent vaccine prepared with A2/Japan/305/57 (current vaccine strain) or A2/Japan/170/62 (currently prevalent virus). Results of this study are presented in Table III. It will be noted that a two fold or greater increase in antibody titer was induced in nearly all subjects and to approximately the same level by either vaccine. In addition, adequate antibody, reactive with the currently prevalent strains was produced by vaccination with the strain contained in commercially available vaccine. It is concluded that vaccination during the recommended period of 1962 would offer adequate protection during the past influenza season.

In addition to the above data, there is laboratory evidence that a portion of the illnesses which were clinically diagnosed as influenza during the current season was due to some other cause. Of 70 clinically diagnosed influenza cases studied in our laboratory from outbreaks in various geographis areas only 33 (43%) were confirmed as A_2 influenza serologically. While further laboratory work on the 37 influenza negative cases is incomplete, 5 were diagnosed in the laboratory as parainfluenza type 1, 2 were parainfluenza type 3 and 1 was due to adenovirus type 3. Therefore, in these studies, less than 50% of the clinically diagnosed influenza cases were caused by A_2 virus, and the etiology of at least 10% could be explained by infection with other agents. It would appear that judgement of the effectiveness of currently available influenza vaccine should be considered only in the light of adequate laboratory data.

TABLE I

SUMMARY, SEROLOGIC CROSS REACTIONS BETWEEN 1957 AND 1963 STRAINS OF ASIAN INFLUENZA VIRUS

Rooster antisera (treated to remove normal inhibitors)	Reciprocal Titer Rooster Antisera Against Indicated Antigens					
	A Jap 305/57	A Formosa 313/57	A DC 301/63	A DC 302/63	A DC 327/63	A Fort Bragg 322/63
A Japan 305/57	1600	800	3200	800	3200	3200
A Formosa 313/57	1600	1600	--	--	800	--
A DC 301/63						
Rooster 704 pre	<50	--	<50	--	--	--
post	50	--	800	1600	1600	400
A DC 302/63						
Rooster 706 pre	<50	--	--	<50	--	--
post	50	50	--	1600	1600	400

TABLE II

INTERPRETIVE SUMMARY, CROSS REACTIONS OF CURRENT A INFLUENZA STRAINS WITH OTHER VIRUSES

Rooster Antisera	Antigens										
	Pr-8	FM-1	FW-1-50	FLW-1-52	A Haw. 303-56	A Jap 305-57	A For. 313-57	A Jap 170-62 (2)	ADC-302-63	AFB-322-63	ADC-327-63
A Pr-8 34	(1) ++++	0	0	0	0	0	-	±	0	0	0
A FM-1 47	++	+++	+++	+	+	0	-	0	0	0	0
A FW-1-50	0	++++	++++	++	++	0	-	0	0	0	0
A FLW 1-52	±	+++	+	++++	+++	0	-	±	0	0	0
A Hawaii 303-56	0	++	±	+++	++++	0	-	0	0	0	0
A Japan 305-57	0	±	0	0	++	++++	+++	++++	+++	++++	++++
A Formosa 313-57	0	0	0	0	0	++++	++++	+++	-	-	+++
A DC 301-63	0	0	0	0	0	±	-	+++	++	+++	++++
A DC 302-63	0	0	0	0	0	±	±	+++	+++	+++	+++

(1) ++++ = 1:1600 - 1:6400; +++ = 1:400 - 1:800; ++ = 1:200; + = 1:100; ± = 1:50; 0 = < 1:50.

(2) This antigen prepared by Dr. J. A. Morris, DBS, NIH, Bethesda, from strains originally isolated by Fukumi in Tokyo in 1962.

Table III

H.I. ANTIBODY RESPONSE TO MONOVALENT INFLUENZA VACCINE

(6-12 Year Old Group)

Vaccine		Antigen Used for Antibody Measurement			
		A2/Jap/305		A2/Jap/170	
		2-fold	GMT*	2-fold	GMT
A2/Japan/305/57	Pre**		30		19
	Post	26/28	140	26/28	80
A2/Japan/170/62	Pre		33		21
	Post	31/31	153	29/31	114

*Geometric mean titer.

**Sera collected at time of vaccination and 2 weeks later.

VI. WEEKLY PNEUMONIA AND INFLUENZA DEATHS

The number of pneumonia-influenza deaths reported in 108 cities has declined steadily for the past three weeks since reaching a peak during the week ending March 16. For the week ending April 6, the number reported was 618, an excess of 109.

During the week ending April 6, every division reported a decline, including the Mountain and Pacific States which had reported increases during the previous week. Excess deaths from all causes declined from 873 during the last week of March to 321 during the first week of April.

Comparison with 1960 A_2 epidemic: Cumulative excess mortality since the week ending January 5th is compared with the 1960 data in the following table:

Cumulative Excess Mortality Since the First Week of the Year

Pneumonia-Influenza		All Causes of Death			
		65 and Over		All Ages	
1963	1960	1963	1960	1963	1960
3,478	4,184	10,264	7,688	17,004	13,687

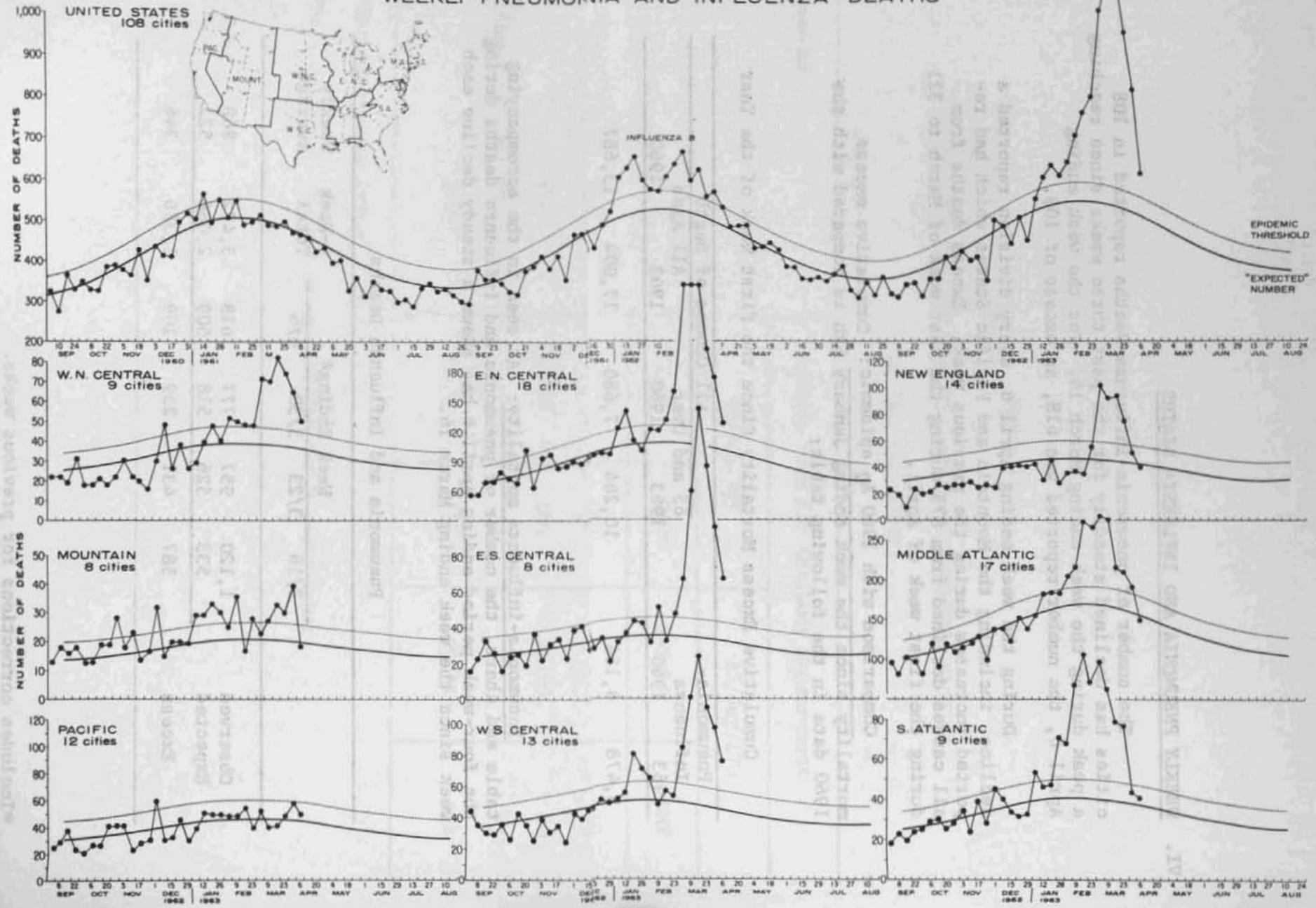
Pneumonia-influenza mortality: As seen in the accompanying table and chart, the number of pneumonia and influenza deaths during the four-week period ending April 6 has shown a steady decline each week since the week ending March 16.

Pneumonia and Influenza Deaths

	Week Ending*				4-Week Total	Weekly Average
	3/16	3/23	3/30	4/6		
Observed	1,120	957	777	618	3,472	868
Expected	533	526	518	509	2,086	522
Excess	587	431	259	109	1,386	346

*Includes corrections for previous weeks.

WEEKLY PNEUMONIA AND INFLUENZA DEATHS



Key to all disease surveillance activities are those in each State who serve the function as State epidemiologists. Responsible for the collection, interpretation and transmission of data and epidemiological information from their individual States, the State epidemiologists perform a most vital role. Their major contributions to the evaluation of this report are gratefully acknowledged.

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Alaska	Dr. Edwin O. Wicks
Arizona	Dr. Lloyd M. Farner
Arkansas	Dr. Wm. L. Bunch, Jr.
California	Dr. Philip K. Condit
Colorado	Dr. C. S. Mollohan
Connecticut	Dr. James C. Hart
Delaware	Dr. Floyd I. Hudson
D. C.	Dr. William E. Long
Florida	Dr. Clarence M. Sharp
Georgia	Dr. W. J. Murphy
Hawaii	Dr. James R. Enright
Idaho	Dr. John A. Mather
Illinois	Dr. Norman J. Rose
Indiana	Dr. A. L. Marshall, Jr.
Iowa	Dr. Ralph H. Heeren
Kansas	Dr. Don E. Wilcox
Kentucky	Dr. William H. McBeath
Louisiana	Dr. John M. Bruce
Maine	Mrs. Margaret H. Oakes
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Minnesota	Dr. D. S. Fleming
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Missouri	Dr. E. A. Belden
Montana	Dr. Mary E. Soules
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New Hampshire	Dr. William Prince
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New York City	Dr. Harold T. Fuerst
New Mexico	Dr. Gerald Parkes
North Carolina	Dr. Jacob Koomen
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