

FOR ADMINISTRATIVE USE

CDC INFLUENZA SURVEILLANCE REPORT  
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SPECIAL NOTE

Information contained in this report is a summary of data reported to the Communicable Disease Center by State Health Departments, Epidemic Intelligence Service Officers, the influenza diagnostic laboratories collaborating with the WHO International Influenza Center for the Americas, and other pertinent sources. Much of it is preliminary in nature and is intended primarily 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

Scattered outbreaks of Influenza A<sub>2</sub> (Asian) and Influenza B have been observed during 1961 in a number of countries throughout the world. Confirmed outbreaks of Asian influenza were reported from every continent except Antarctica. Influenza B was less ubiquitous, touching only Europe, North America and Asia with recognized outbreaks.

Within the continental United States, Asian influenza made its mark early in 1961. At that time, outbreaks were reported from New York City, Stamford and New Haven, Connecticut. It was not prevalent elsewhere. No confirmed outbreaks of Asian influenza have been reported during the present season.

In contrast, Influenza B is known to be etiologic in outbreaks in four States at the present time. These are Arizona, Florida, California and Colorado. Southern Saskatchewan is also involved in an epidemic of Influenza B.

Respiratory disease outbreaks are occurring with increasing frequency in the United States with the advent of the winter season. Several States are reporting outbreaks that would appear to be significantly more widespread than usual. These States are Oregon, Missouri, and Illinois. Epidemiologic, clinical, and laboratory studies are under way.

Influenza vaccine production has been stepped up to meet the demands. The projected supply will be three times greater than that available last year. The recommendation of the Surgeon General to immunize the high risk groups remains most pertinent. Subcutaneous inoculation is the route of choice.

## II. EPIDEMIC REPORTS

### A. ASIAN (A<sub>2</sub>) OUTBREAKS - Since January 1961

Confirmed outbreaks due to Asian strain influenza virus during 1961 were as follows: (in approximate chronological order)

#### 1. THE UNITED KINGDOM: ENGLAND AND WALES (December 1960 - March 1961)

Beginning in late December 1960 in the Birmingham area, outbreaks of influenza spread to surrounding areas including the Midlands, the North-West of England, and the West Riding of Yorkshire. Scattered outbreaks occurred elsewhere. In the region concerned, there was a moderate rise in National Insurance claims and respiratory deaths. Asian influenza (England/1/61) was isolated consistently from cases associated with the outbreaks. It was noted to be antigenically different from the 1957 strain.

(Weekly Epidemiological Record Nos. 3,5,7,9,10,15,17,20;  
Influenza Surveillance Report No. 60)

#### 2. IRELAND (January 1961)

Sporadic cases began to occur at the end of the first week of January, becoming epidemic in Dublin and some other parts of the country shortly thereafter. Some firms had a 20-30 percent absentee rate. The group attacked appeared to be adults rather than children. The incidence was higher than in 1957. Mortality was not high; deaths occurred mainly among the older age groups, particularly in those with previous chronic cardiac or chronic respiratory disease. A virus strain very similar to, if not identical with, Asian was isolated. (Weekly Epidemiological Record Nos. 5,6)

# Influenza Deaths

United Kingdom: England and Wales

1961

Week ending:	Deaths:
November 26	21
December 3	16
10	20
17	29
24	23
31	47
January 7	150
14	246
21	358
28	699
February 4	1221
11	1400
18	972
25	568
March 4	340
11	198
18	104
25	80
April 1	40
8	30
15	23
22	12
29	12
May 6	13

3. CANADA: ONTARIO (February 1961)

Beginning in early February, a number of cases were reported among the civilian as well as military personnel in Ottawa. Six isolates were obtained; all from military personnel and all Asian strain. (Weekly Epidemiological Record Nos. 17,23)

4. FINLAND (February 1961)

Beginning in February, some cases of influenza-like disease occurred, mainly in military garrisons. No epidemics were seen in the civilian population. Several strains closely resembling Asian were isolated. (Weekly Epidemiological Record No. 12)

5. NEW YORK (February-March 1961)

New York City experienced an increased incidence of pneumonia and influenza deaths during February and March but there was no evidence of widespread outbreaks. With a 10-year average ranging between 55 and 65 pneumonia and influenza deaths per week, the weekly average in New York City during the first four months of 1961 was 88.4. In addition, sera from the age group 60 and over showed that the percentage of these individuals with A<sub>2</sub> antibodies increased from 58 to 80 percent. Five A<sub>2</sub> isolates were obtained. (Influenza Surveillance Report No. 60)

6. CONNECTICUT (March-April 1961)

In New Haven, where influenza occurred specifically among the university personnel, several strains of Asian were isolated. Significant rises in titer to Asian were found in specimens of blood from three persons in Stamford. (Influenza Surveillance Report No. 60)

7. TAIWAN (March-June 1961)

During the months of March through June, seven strains of influenza virus A<sub>2</sub> resembling the England/1/61 were isolated. No epidemiologic information is available to accompany these laboratory data. (Dr. L. J. Green, NAMRU 4, US Navy)

8. CANADA: NEW FOUNDLAND (March 1961)

CAROL LAKE, LABRADOR

An outbreak of about 70 cases was reported in March. Three strains of Asian were isolated.

GOOSE BAY, LABRADOR

An outbreak was reported at the same time in a military establishment at Goose Bay. Three strains of Asian were isolated. (Weekly Epidemiological Record No. 23)

9. CANADA: ALBERTA (March 1961)

Four strains of Asian virus were isolated from influenza cases in Edmonton, Namao, and Vilna. (Weekly Epidemiological Record Nos. 23,25)

10. POLAND (April 1961)

In early April, a few outbreaks of influenza were reported with a few Asian strains obtained by isolation. (Weekly Epidemiological Record No. 15)

11. ABOARD CARGO LINER SS PRESIDENT GRANT (March 1961)

An influenza-like illness occurred among 12 crew members between March 10 and 15. The ship had left New York City on March 10, where an outbreak was in progress. No virus was isolated from throat washings collected while the ship was passing through the Panama Canal; however, evidence of recent infection by influenza A<sub>2</sub> was obtained by complement fixation tests. (Influenza Surveillance Report No. 60)

12. PANAMA (June 1961)

During the month of June, the Republic of Panama and the Canal Zone populations experienced an episode of influenza-like illness. The clinical symptoms were relatively mild and there probably was no greatly increased mortality from pneumonia-like illness. Two clinical entities were thought to be prevalent: 1) an influenza-like syndrome, and 2) a transitory illness in which headache and photophobia were more prominent. Three Asian viruses were isolated, similar to England/1/61. (Dr. Henry K. Beye, Director, Middle America Research Unit, Balboa Heights, Canal Zone)

13. BRAZIL (June-July 1961)

An outbreak of influenza occurred in Rio de Janeiro in June and July. Four strains of Asian virus were isolated. (Weekly Epidemiological Record No. 32)

14. SOUTH AFRICA (June-July 1961)

During June and July an epidemic of influenza was reported in Cape Town and the surrounding area within a radius of 100 miles. The disease was mild; no deaths occurred. All the strains of virus isolated belonged to the Asian sub-group with one exception (Johannesburg B). (Weekly Epidemiological Record No. 37)

15. PHILIPPINES (June 1961)

A rise in incidence of influenza in the Philippines began in early June in the City of Manila. Increased incidence was subsequently noted in other parts of the country. The reported number of cases in Manila between June 4 and June 21 was 8,855. Virus isolation implicated Influenza A<sub>2</sub>, similar to the England/1/61 strain. (Weekly Epidemiological Record Nos. 25,26; T. N. Briones, M.D., Chief, Division of Public Health Laboratories, Manila Health Department)

16. TANGANYIKA (May-June 1961)

A moderate outbreak occurred in May and June in Dar-es-Salaam. "Virus A" was isolated. (Weekly Epidemiological Record No. 28)

17. CHILE (May-August 1961)

During the Chilean fall and winter months, May-August, cases of respiratory illness of variable severity occurred. Paired sera showed titer rises to Influenza A<sub>2</sub>. A smaller number of paired sera showed significant titer rises to Influenza B. Fifty-five throat washings of hospitalized cases of respiratory illness were obtained. Only two revealed virus. Both were Influenza A<sub>2</sub>. (Dr. Avendano, Chilean Bacteriological Institute, Santiago)

B. INFLUENZA B OUTBREAKS - Through October 1961

Confirmed outbreaks due to Influenza B virus during 1961 were as follows: (in approximate chronological order)

1. JAPAN (January-March 1961)

An Influenza B epidemic of unusual proportions occurred during the winter months. Beginning in Tokyo in January and spreading through the rest of the country in March, the epidemic was responsible for widespread closure of schools. By the middle of February, 35 percent of the schools in Tokyo had been entirely closed for varying periods of time. A survey for influenza-like illnesses among Tokyo Health Department employees and their families showed a striking similarity of attack rates in all age groups, with an average of 43 percent and a range of 31-53 percent.

<u>Age Group</u>	<u>Attack Rate - Per cent</u>
0-9	53.3
10-19	43.9
20-29	38.9
30-39	43.2
40-49	43.5
50-59	31.4
60-69	36.7
70+	31.0

(Weekly Epidemiological Record No. 5; Influenza Surveillance Report Nos. 59, 60)

2. NORWAY

An outbreak of Influenza B occurred in the industrial town of Odda in January, with incidence highest among the 10-20 year age group. (Weekly Epidemiological Record Nos. 7, 18; Influenza Surveillance Report No. 60)

### 3. KOREA (April 1961)

An epidemic of influenza occurred in early April in Seoul and the surrounding areas. Results of hemagglutination-inhibition tests indicate Influenza B virus. (Weekly Epidemiological Record No. 19)

### 4. ALASKA (April 1961)

An outbreak of influenza occurred in Fort Yukon, Alaska, in mid-April 1961. The outbreak was sudden, with the epidemic curve falling within a two-week period. The overall and the age-specific attack rates did not differ significantly in the white and native populations.

The clinical picture was that of sudden onset of malaise, fever, and myalgia with specific symptomatology referable to the upper respiratory tract. There was mild coryza, nonproductive cough, and occasional sore throat. Lower respiratory tract sequelae were fairly common approaching 15 percent of cases.

No viral isolations were made. However, 14 of 19 serum pairs showed a four-fold or greater increase in antibody titer against the B/Great Lakes/1739/54 influenza virus antigen as measured by the hemagglutination-inhibition test. (Weekly Epidemiological Record No. 35; Dr. James E. Maynard, Acting Chief, Epidemiology Section, Arctic Health Research Center, Anchorage, Alaska)

### 5. JAMAICA (August-October 1961)

A small outbreak of respiratory disease occurred in workers at a mining camp in Jamaica. Type B influenza virus was isolated from one of the workers. In addition, paired sera from three other workers at the mining company, one nurse and one patient in a local hospital showed rises to Influenza B. Clinical and epidemiological information on the outbreak is not yet available. (Dr. M. Michael Segal, Dr. Jim Conner from Variety Children's Research Foundation, Miami, Florida)

### 6. ARUBA (October 1961)

An unofficial report was received in October that Influenza B virus was recovered from an outbreak on the island of Aruba, off the north coast of Venezuela. (Dr. M. Michael Segal, Dr. Jim Conner from Variety Children's Research Foundation, Miami, Florida.)

C. THE PRESENT SEASON

1. FLORIDA (November 1961)

During the week of November 20, a circumscribed outbreak occurred in Key Biscayne, Florida, among high school students traveling by bus to the South Miami High School. Approximately half of the riders were affected by the disease. It was characterized by fever, sore throat, headache and retro-orbital pain. Myalgia was not a common part of the clinical picture. Throat washings were obtained from six patients. Three isolates were obtained, one of these was similar to the Great Lakes strain of Influenza B virus. No other cases of respiratory illness are known to have occurred at the South Miami High School. (Dr. M. Michael Segal, Dr. Jim Conner from Variety Children's Research Foundation, Miami, Florida; Dr. James O. Bond, Director, Bureau Preventable Diseases, Florida State Board of Health.)

2. CALIFORNIA (November 1961)

Since the middle of November, outbreaks of respiratory disease have been reported from most of the major centers in the State. School absenteeism as high as 30 percent in some schools is reported from northern coastal counties, mountain counties and the interior valley. There is no unusual absenteeism of teaching staff in the schools or increased absenteeism reported from industrial concerns. Two different clinical entities existed during the early weeks. One is characterized by malaise, sore throat, fever, cough, and some myalgia; the other by mild upper respiratory symptoms, diarrhea, and fever. At present, the latter syndrome has all but disappeared. Active laboratory investigation implicates Influenza B in a number of outbreaks. Serologic titer rises to Influenza B have been obtained to date from six counties: Santa Clara, Los Angeles, Sonoma, Santa Cruz, Monterey, and San Francisco. Influenza B was isolated from a 13-year old boy in Los Angeles City. The throat swab was obtained on December 1. Serologic titer rises to Influenza B were taken from children with one exception: a 40-year old female from Los Angeles County.



The outbreak of respiratory illness in the San Fernando Valley has been described in some detail. Excess illness absenteeism in public schools began during the week beginning November 20. Following the Thanksgiving holiday, absenteeism had reached approximately 35 percent in some schools. Observations at two schools - Madison Junior High School and Grant High School - situated near each other, and drawing roughly from the same population, are included in the tables below.

ACUTE RESPIRATORY ILLNESS EPIDEMIC  
SAN FERNANDO VALLEY  
1961

Frequency of Symptoms Among 21 Cases Interviewed After Recovery

<u>Symptom</u>	<u>Present</u>	<u>Absent</u>
"Fever"	14	7
Cough	20	1
Coryza	18	3
Sore throat	14	7
Headache	14	7
General aches and pains	4	17

Familial Aggregation of Illness, November 20 to December 6

<u>Index Persons</u>	<u>No. Households</u>	<u>Total Persons</u>	<u>Number Ill</u>	<u>Multiple Case Households</u>
Ill	24	100	57	16
Not ill	<u>22</u>	<u>105</u>	<u>10</u>	<u>3</u>
Total	46	205	67	19

Boys Town (San Fernando Valley), a semi-closed group of approximately 78 boys 13-17 years of age, had an outbreak of respiratory disease between November 20 and December 1, with the peak of the epidemic on November 30. Thirty-three of the boys were ill during this period. The attack rate is therefore 42 percent. The isolation of the Influenza B virus mentioned earlier was obtained from one of these boys.

(Dr. Henry Renteln, Division of Communicable Disease Control, Dr. Harold Maller, EIS Officer, both of the California State Department of Public Health; Dr. Charles Pait, Los Angeles City Health Department Laboratories, and Dr. John M. Chapman, Professor of Epidemiology, UCLA.)

### 3. ARIZONA (November 1961)

The outbreak of respiratory disease which began in mid-November in the Hopi and Navajo Indian Reservation in northeastern Arizona has been identified as Type B influenza. Seven of 10 paired sera obtained during the outbreak show significant titer rises for Type B influenza. Positive sera were obtained from the Hopi Indian Reservation, as far west as Grand Canyon and from Fort Defiance, Arizona, on the New Mexico border.

School absenteeism among the Hopi peaked at four Hopi schools with the week beginning November 13, reaching a maximum of 32 percent absenteeism. This is unusual for the Hopi School system since attendance at their schools usually ranges from 95 to 98 percent. Preliminary results from a 20 percent morbidity survey of the 3500 Hopi Indians gave the following attack rates for upper respiratory infections over the past several weeks:

<u>Age Group</u>	<u>Attack Rate</u>
0 - 14	48%
15 - 24	32
25 - 44	20
45 - 64	20
65 and over	33

Clinical characteristics of the illness included fever of 100-101<sup>o</sup>, severe sore throat with cough, minimal conjunctivitis, absence of pulmonary involvement, myalgia and frontal headache. The acute symptoms last for two or three days.

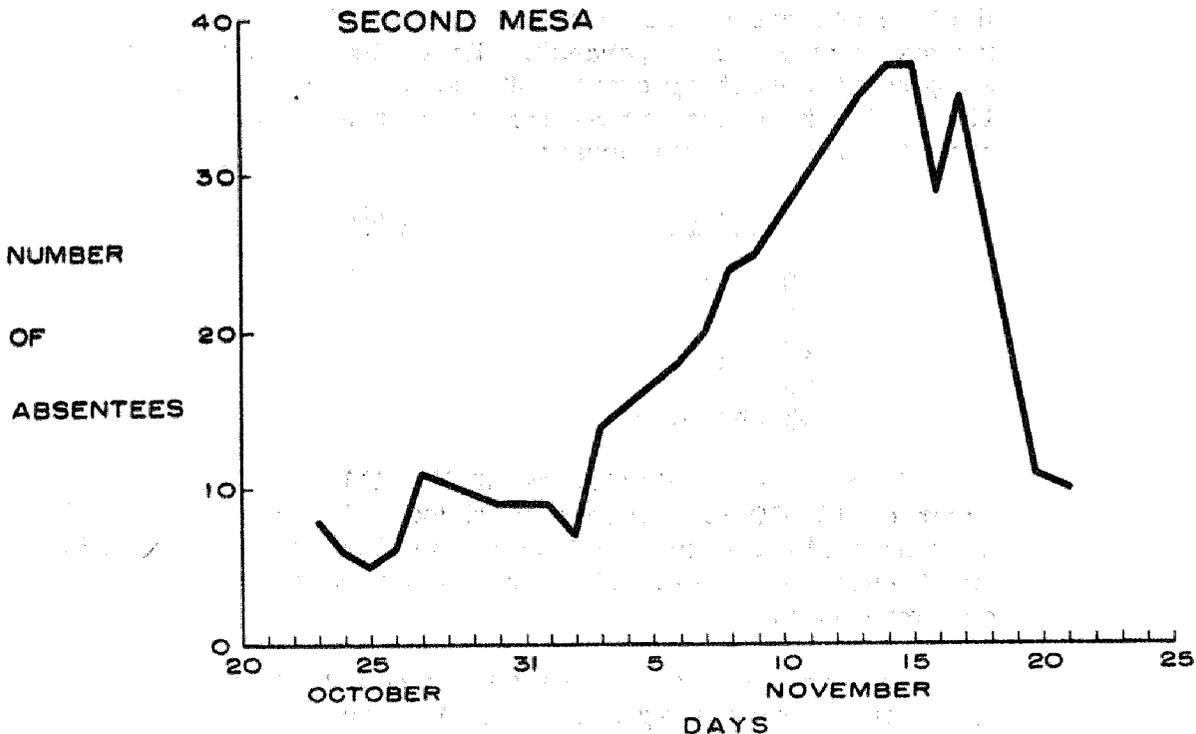
The Keams Canyon School on the Reservation presented an unusual opportunity for study of vaccine effectiveness. Those children who board at the school had been vaccinated; the day school children had not been vaccinated. All boarders are brought to the USPHS Indian Hospital Clinic if there is any indication of illness. Of 320 boarders in the immunized group, only one case of clinical influenza has been noted by the clinic physicians. Of 120 day students who are not immunized, there have been 26 cases of clinical influenza.

Attack Rate

Immunized 0.3%  
Not Immunized 22.0%

Laboratory studies on these groups are in progress.

A Hopi Indian School on the Reservation illustrates well the epidemicity of the illness. The accompanying graph records the total number of absentees each day from this school which has a total enrollment of 190 students.



4. COLORADO (December 1961)

Durango reports school absenteeism up to 30 percent. Numerous cases have occurred in Pueblo and Colorado Springs. Paired sera indicating Influenza B have been obtained from three cases.

5. CANADA: SASKATCHEWAN (November 1961)

An outbreak of severe respiratory disease in November caused school absenteeism as high as 90 percent in some areas of Saskatchewan, Canada. The epidemic has spread from the focus at Regina to involve a number of communities in the central and southern regions of that province. Clinically, the disease has been relatively mild. The course of illness has been described as being frequently biphasic in character with relapses noted following a 4-6 day course of the disease. Symptoms noted are conjunctivitis, headache, fever, weakness, and gastro-intestinal complaints. Complications are rare but influenza deaths associated with staphylococcal pneumonia (phage type 80/81) occurred in two women age 25 and 35. It has been observed that the spread of disease among patients within the hospitals has been rare although many absences have been noted among hospital attendants. Isolates obtained resembled the Great Lakes variant of Influenza B. No other outbreaks are presently known in Canada. (Dr. W. W. R. Best, Chief, Epidemiology Division, Department of National Health and Welfare, Ottawa, Canada.)

6. MISSOURI (December 1961)

Outbreaks of respiratory illness have been reported recently from Potosi, Cape Girardeau, and Jefferson City, Missouri. Beginning about December 10 in Potosi, an acute respiratory illness has attacked 800 of approximately 2400 students. The outbreak is characterized by high fever, sore throat, nausea and vomiting. It lasts approximately 5 days. The nature and extent of the respiratory illness in the two other areas is as yet unknown. Laboratory studies are also under way. (Dr. H. M. Hardwicke, Acting Director of Health, Missouri Department of Health and Welfare).

7. ILLINOIS (December 1961)

A mild to moderately severe upper respiratory infection is prevalent in the southern part of Illinois. The symptoms are apparently not typical of influenza.

Wolf Lake, Shawnee, Mounds, and Mounds City are known to be involved. In Shawnee school absenteeism is about 30 percent. (Dr. Norman J. Rose, Illinois State Department of Health).

#### 8. OREGON (November-December 1961)

An outbreak of upper respiratory disease and gastro-enteric disease, which began in November in counties surrounding Portland, has continued to spread, involving Washington County to the northwest and Grant's Pass in the southermost portion of the State. Early reports of the appearance of the illness in the eastern part of the State have also been received. Two types of illness account for the school absenteeism, which is as high as 20-25 percent: 1) an upper respiratory disease with fever 99-101°, sore inflamed throat, and some vomiting. The condition persists from 3-4 days, 2) a gastro-intestinal condition with fever 99-101°, abdominal cramps and diarrhea. This condition also persists for about 3-4 days. Industrial concerns show a normal or only slightly elevated absenteeism. Absenteeism in any one plant or any date through December 1 has not been higher than 4 percent. Cases occurring in adults are reported in the Portland area, with upper respiratory symptoms, mild diarrhea and myalgia and some temperatures of 103°. Several of these have had relapses after several days suggesting a biphasic pattern. Laboratory studies are in progress. (Dr. Grant Skinner, State Epidemiologist, Oregon State Board of Health).

#### 9. CONNECTICUT (December 1961)

A report of 27 children ill with acute respiratory disease has just been reported from Avon, a small town west of Hartford, Connecticut. Throat swabs and paired sera are being obtained. No further epidemiological or clinical information is available. (James C. Hart, M.D., Connecticut State Department of Health).

### III. INFLUENZA VACCINE

In July 1961, the Surgeon General's Advisory Committee on Influenza met in Atlanta, Georgia, to discuss the influenza problem for the coming year. The group recommended that the Public Health Service continue to promote influenza vaccination among certain high risk groups: the chronically ill, those above 65 years of age, and pregnant women. The recommendations of this conference are incorporated in a "Fact Sheet" which is available upon request from the Communicable Disease Center.

The demand for influenza vaccine from all segments of the population has exceeded all reasonable anticipation. In the last several months all the manufacturers have increased their production of influenza vaccine and it is hoped that by the beginning of 1962 the supply of vaccine will catch up with the demand.

#### A. PRODUCTION

The following figures represent the total number of doses of influenza vaccine shipped by all manufacturers. Also included is an industry-wide total of planned production. It is worthwhile to note that the projected production figures are three times higher than they were for the same period last year.

<u>Shipped</u>	<u>Doses</u>
July 1960 - June 1961	8,438,200
July 1961 - December 8, 1961	16,474,323

<u>Planned</u>	<u>Doses</u>
December 8 - December 31, 1961	2,616,500
January - February 1962	3,976,500
March 1962	400,000 (incomplete)

#### B. UTILIZATION

It is recommended that influenza vaccine be given preferentially to the high risk groups. These groups tend to succumb more readily to influenza than the remainder of the population. Industrial concerns, whose employees by and large do not fall into the high risk category, are urged to

refrain from carrying out widespread vaccination programs. Those industries which have already given one dose to their employees are urged to refrain from giving a second dose. Given subcutaneously, it will probably not boost effectiveness more than 20 percent.

#### C. ROUTE OF INOCULATION

The question of the preferable route of administration of influenza vaccine has recently been discussed with Dr. Colin MacLeod, Chairman of the Advisory Committee on Influenza, and with Dr. Fred Davenport. As they point out, comparisons of serologic response obtained following administration of 0.1 cc of vaccine intradermally and 1.0 cc of vaccine subcutaneously have been performed by a number of investigators. On the basis of these studies, they feel quite positively that the subcutaneous administration of vaccine is clearly preferable and, given a choice between immunizing a few subcutaneously or many by the intradermal route, they would favor subcutaneous immunization of fewer. Several studies are in progress now, which will shed further light on this subject.

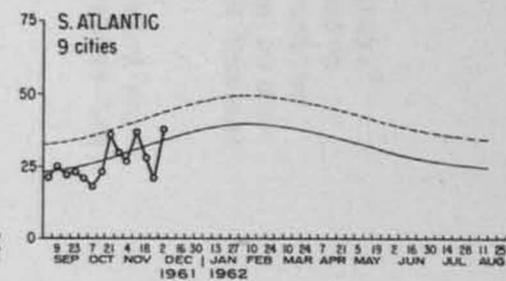
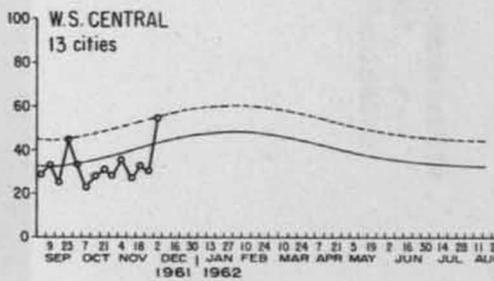
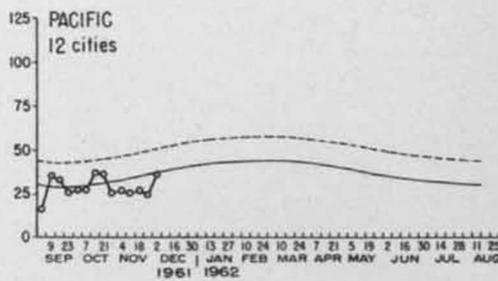
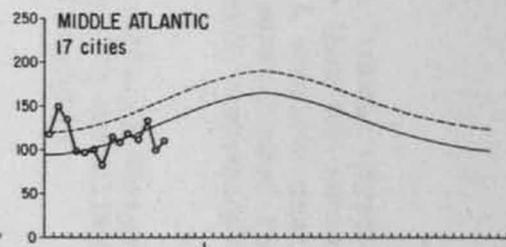
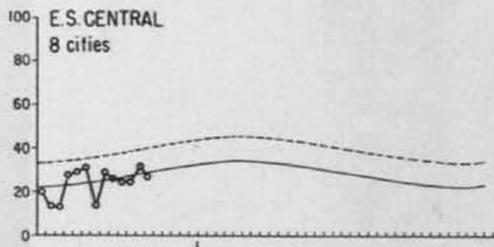
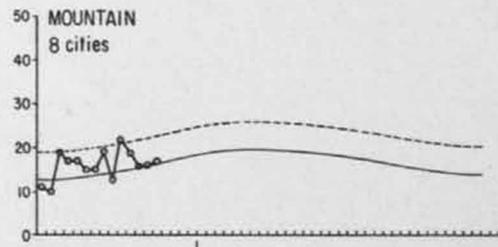
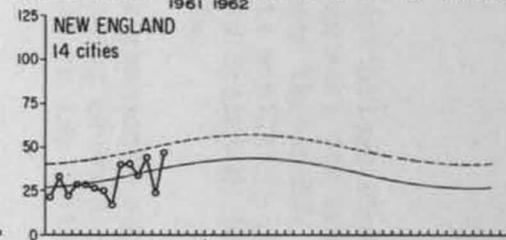
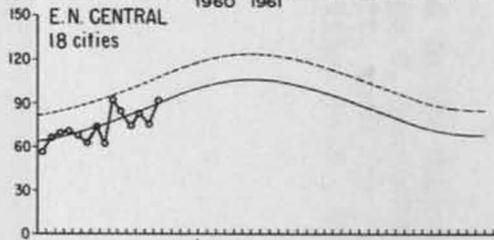
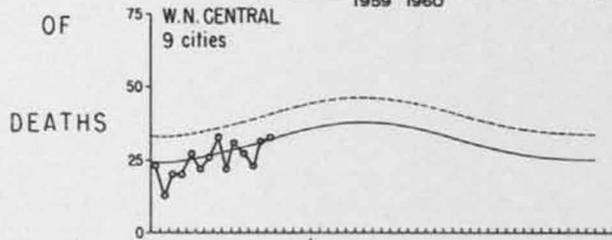
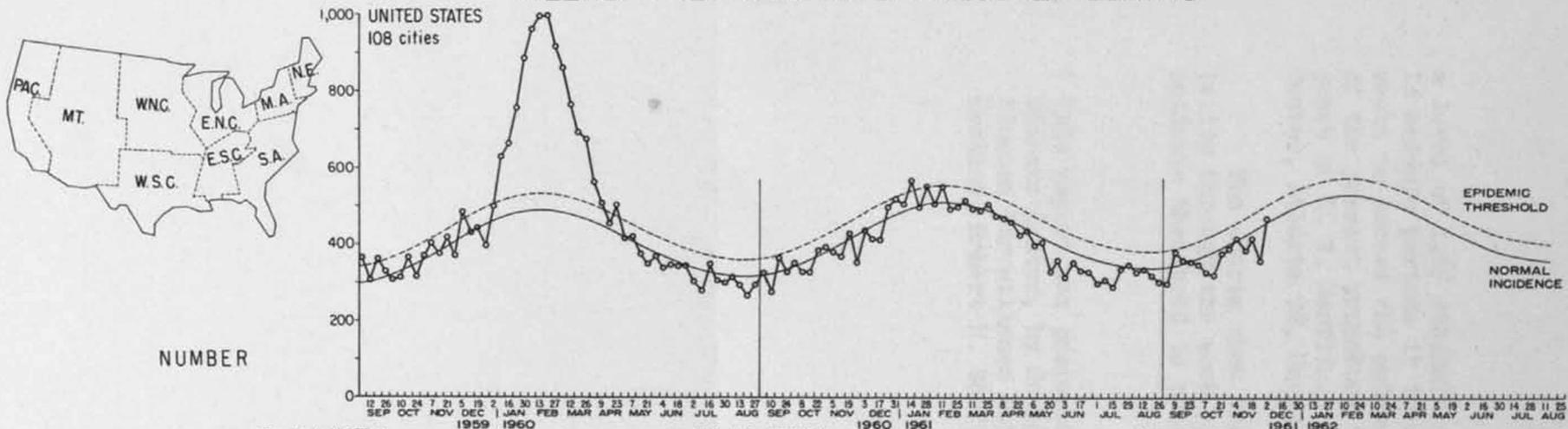
#### IV. MINOR ANTIGENIC CHANGE

There is some evidence of a minor antigenic change in the type A<sub>2</sub> viruses when compared to strains isolated in 1957. This change is not great enough to necessitate changes in diagnostic procedures, virus identification, or in the vaccine. Little, if any, variation has been noted among type B strains although the epidemics in Japan and Alaska have had high morbidity rates, especially in children and aged persons. (WHO Influenza Center for the Americas, Roslyn A. Robinson, Director.)

#### V. WEEKLY PNEUMONIA AND INFLUENZA DEATHS

The pneumonia-influenza death charts show expected "normal" levels of mortality in the 108 cities. These are based on seasonal change in non-epidemic years and include a linear trend component reflecting increase in the total number of deaths. The increase is affected by population growth since total deaths rather than rates are used as an index. The "epidemic threshold" is placed at

# WEEKLY PNEUMONIA AND INFLUENZA DEATHS



a level of 1.65 standard deviations above "normal expectancy." In endemic periods it is unusual for more than two successive weeks to exceed the epidemic threshold. A complete description of the present procedure is available in mimeographed form on request to R. E. Serfling, Epidemiology Branch, Communicable Disease Center, Atlanta 22, Georgia.

The charts show the pneumonia and influenza-associated mortality through the week ending December 2. No mortality above the epidemic threshold is noted in any of the regions.

( This report was prepared in the Surveillance Section, Communicable Disease Center, by George C. Denniston, Jr., M. D., Chief, Influenza Surveillance Unit, with the assistance of the Statistics Section, Robert E. Serfling, Ph.D., Chief. )